Water Quality Monitoring of Five Mercer Island Drainage Basins from 2008–2010

Mercer Island Water Quality Monitoring Program

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King County

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EXECUTIVE SUMMARY

The City of Mercer Island has contracted with King County Water and Land Resources Division (WLRD) since 1999 to provide water quality monitoring in selected Mercer Island drainages as part of the City's comprehensive stormwater management efforts. The City has invested in this monitoring effort to better understand water and sediment quality within five to six selected basins and how those drainages may potentially impact Lake Washington. This report summarizes results from monitoring conducted in 2008 through 2010 for each basin.

Measurements included conventional parameters, nutrients (through March 2009), bacteria, macroinvertebrates (2008 only), dissolved metals, herbicides and pesticides, and sediment contaminants (metals, non-polar hydrocarbons, and particle size distribution). Modifications made to the monitoring program from previous study years are outlined in the introduction of this report. Water and sediment measurement were compared to relevant water quality standards and sediment guidelines or placed in a regional context when criteria were not available.

As in previous years, the water quality issues in most of the basins from 2008 through 2010 were related to storm flow volumes and velocities, with subsequent erosion. High total suspended solids, turbidity, and conductivity were measured during storm events. Basins 10 and 32 continue to have high copper and zinc concentrations exceeding acute water quality standards. These contaminants are generally associated with motorized vehicles and impervious surfaces. Chlorinated herbicides were detected in four storm samples in June 2008 and one sample during baseflow conditions in June 2010. Over the course of this eleven year project, only one herbicide or pesticide has been detected at concentrations above available guidelines, and that was Diazinon from a storm sample collected from Basin 32 in 2001. Bacteria levels were generally above the criteria for recreational use, even during baseflow conditions, which is not unexpected for urban drainages. However, the concentrations of bacteria in stormwater flows in Basins 6, 10, 26, and 42 merit further source investigation to determine if there is a potential health risk in these drainages. The benthic macroinvertebrate sampling done in 2008 was consistent with previous years, with communities ranked as either poor or very poor according to the Benthic Index of Biotic Integrity (B-IBI).

In 2008 sediment samples were collected in Basins 10, 26, 29, and 32. In subsequent years, sediment samples were only collected in Basins 10 and 32, as these were the two basins where sediment guidelines had previously been exceeded. Basin 10 sediments exceeded zinc guidelines in all three years, where Basin 32 exceeded guidelines only in 2008. The particle size distribution analysis confirmed field observations that there was little depositional material in these basins. Because contaminants are generally associated with fine material, and most of the fine material in these basins is flushed through the system during peak flows, these chemistry results may be an underestimation of sedimentary contaminants that are moving through the system.

Future basin monitoring should be tailored to address the water quality and quantity issues described in this report. Investigating where peak flows are originating may help focus further reduction/attenuating strategies and should also reduce erosion and sediment/nutrient and potentially bacteria inputs.

1.0. INTRODUCTION

As part of its comprehensive stormwater planning and management effort, the City of Mercer Island (City) implemented subbasin scale drainage improvements to facilitate silt removal and erosion control, and to minimize the input of degraded runoff to Lake Washington, the receiving waterbody. Since 1999, the City has contracted with the King County Water and Land Resources Division (WLRD) to evaluate the effectiveness of these stormwater facility improvements by assessing water and sediment quality, as well as examining biological indicators of ecosystem health, in representative basins draining to Lake Washington.

In 2008 stormwater, sediment, and macroinvertebrate sampling was conducted in five Mercer Island streams as a continuation of the monitoring program established in previous years as described in the 2006 annual report (King County 2008). In March 2009 the underlying questions driving the monitoring effort were redefined and the monitoring program was revised. Baseflow monitoring for conventionals, bacteria, and herbicides in all basins was added to the program to characterize water quality during summer low flow conditions. Below is a summary of program changes that were made in March 2009:

Nutrients – Nutrients were discontinued after March 2009 following ten years of storm sampling. Water quality monitoring of both Basins 42 and 10 have shown relatively high fractions of ortho-phosphorus, the biologically available component of total phosphorus, and potential sources were identified as landscaping practices. However, investigation into landscaping practices (both commercial and private) was considered beyond the scope of this monitoring program. No major land use changes in the basins are anticipated. There are currently no federal or state water quality standards (WQS) for nutrients.

Bacteria – Since there are currently no WQS for *E. coli*, analysis of this parameter was discontinued in March 2009. Sampling and analysis is now focused on fecal coliform bacteria, for which WQS are available. Dry season sampling for fecal coliform bacteria was added in 2009.

Pesticides – Organophosphate pesticide testing was discontinued in March 2009 due to the declining use of these products (Diazinon was restricted from homeowner use December 2004; chlorpyrifos was restricted in December 2001). Additionally, the frequency of detection of these chemicals has decreased since their sales have been restricted. Malathion, the most commonly used organophosphate insecticide in the United States has only been detected once in Mercer Island streams (Basin 10 in 2001).

Herbicides – Stormwater sampling for chlorinated herbicides was discontinued in 2009, as all detected levels throughout the ten years of storm sampling were below any available WQS or effects thresholds. Summer season (baseflow) sampling and analysis of the chlorinated herbicides was added in 2009 to characterize concentrations of these herbicides during the growing season when they are typically applied.

Benthic Macroinvertebrates – Benthic macroinvertebrate sampling and analysis was discontinued in 2009. Due to the natural physical limitations of the island streams, the benthic macroinvertebrate communities are not directly comparable to the regional streams on which the Benthic Index of Biological Integrity (BIBI) is based.

Sediment – Sediment sampling and analysis for metals and non-polar oil (NPO) was reduced in 2009 to Basins 10 and 32b, the two basins where freshwater sediment guidelines for metals have been exceeded in past sampling.

Oils – Analysis of oil in water samples was discontinued. In 2003, 2004, and 2006 the Washington Department of Ecology's WTPH Hydrocarbon Identification test was used to screen for the presence of petroleum products including gasoline, diesel, and lube oils in annual storm samples. The WTPH test provides qualitative information about the presence and type of petroleum products. The only detectable hydrocarbons found in the Mercer Island basins were in the lube oil range ($>C_{24}$) measured in Basin 10 in 2004 (7.8 mg/L) and 2006 (0.62 mg/L), and Basin 32b in 2006 (0.26 mg/L). Since these values are considered low, monitoring for oil compounds in water were discontinued. Monitoring for oil compounds in the sediments of Basins 10 and 32b continued through 2010.

Water and sediment samples were collected in 2008, 2009, and 2010 and analyzed for a variety of parameters (Table 1). Although the grab samples collected only represent a snapshot in time, the data can be reviewed qualitatively for key parameters that are repeatedly detected above WQS and freshwater sediment guidelines (Smith et al. 1996, Avocet Consulting 2003, WDOE 2006). This information can be useful for improving and focusing stormwater management techniques, and for guiding salmon conservation and recovery efforts in Lake Washington. With the listing of Puget Sound Chinook salmon as threatened under the Endangered Species Act (ESA; for current status see: http://www.nwr.noaa.gov/Species-Lists.cfm), Mercer Island's drainage impact on water and sediment quality becomes increasingly important.

The overarching goal of this monitoring effort is to better understand the water and sediment quality condition within the main watercourses of five select basins, just prior to draining to Lake Washington. This report presents results from field and laboratory investigations conducted in 2008 through 2010, and highlights significant patterns or trends detected after 11 years of monitoring. Where applicable, water quality parameters measured before basin improvement implementation were compared with those measured after project completion.

Table 1. Water and sediment quality parameters measured in 2008, 2009, and 2010.

Time Frame	Water Quality						Sediment Quality [1]	
	Conventional/Other	**Nutrients**	**Biological**	**Dissolved Metals**	**Chlorinated Herbicides**	**Organo-phosphate Pesticides**	**Metals**	**Misc Parameters**
2008 - March 2009 STORM	Discharge Rainfall Temperature Dissolved oxygen (DO) Conductivity pH Turbidity TSS[2] Hardness NPO[3]	Total phosphorus (TP) Ortho-phosphorus (OP) Total nitrogen (TN)	Fecal coliform *Escherichia coli* Benthic Invert	Copper (Cu) Lead (Pb) Zinc (Zn) Chromium (Cr)	2,4,5-T 2,4,5-TP (Silvex) 2,4-D 2,4-DB Dalapon Dicamba Dichloroprop Dinoseb MCPP MCPA	Chlorpyrifos Diazinon Disulfoton Malathion Parathion-Ethyl Parathion-Methyl Phorate	Cu Pb Zn Cr	NPO[3] % solids % particle size
April 2009 -2010 STORM	Discharge Rainfall Temperature Dissolved oxygen (DO) Conductivity pH Turbidity TSS[2] Hardness		Fecal coliform	Copper (Cu) Lead (Pb) Zinc (Zn) Chromium (Cr)				
April 2009 -2010 BASEFLOW	Discharge Rainfall Temperature Dissolved oxygen (DO) Conductivity pH Turbidity TSS[2] Hardness		Fecal coliform		2,4,5-T 2,4,5-TP (Silvex) 2,4-D 2,4-DB Dichloroprop Dinoseb MCPP MCPA		Cu Pb Zn Cr	NPO[3] % solids % particle size

1. Sediment sampled annually at stations 10 and 32b only in 2009 and 2010.
2. Total Suspended Solids (TSS)
3. Nonpolar Oil Hydrocarbon identification (NPO)

2.0. STUDY AREA

Between 2008 and 2010, water and sediment quality were evaluated in basins 10, 6, 26, 32b, and 42 (Figure 1) selected by the City as representative of typical land uses across the island. Percent impervious area in all basins is between 36 and 48 percent, with the exception of Basin 42 which has 22 percent impervious area (Table 2). Basin 10 represents land use dominated by commercial centers (Figure 2). Land use in Basin 32 is primarily residential with a few commercial areas. The other three basins (6, 26, and 42) drain steep ravines adjacent to residential neighborhoods (Figure 2). These are non-salmonid bearing streams, with watercourses that are alternately free flowing and tight-lined (channelized in concrete ditches or pipes). Sampling locations were chosen to best characterize stormwater runoff draining to Lake Washington, and with the exception of Basin 32, samples were collected from each creek at the most downstream point before the water enters the final tight-line to the lake. The following sections provide a description of the study basins.

Table 2. Surface area, percent total impervious surface, and primary land use category for the six study basins.

Basin Number	Years Sampled	Area (ft2)	% Impervious [1]	Primary Land Use
6	1999 - 2010	7,895,002	38	residential/ravine
10	1999 - 2010	11,623,830	48	commercial
26	2001 - 2010	4,381,099	37	residential/ravine
29	1999 - 2002	5,108,666	36	residential/ravine
32b	2001 - 2010	8,013,778	37	residential
42	2003 - 2010	6,692,180	22	residential/ravine

1. Imperviousness calculations conducted by City of Mercer Island Information and Geographic Services

2.1 Drainage Basin 6

The main watercourse of Basin 6 captures flow from neighborhoods consisting primarily of single-family residences and limited higher density housing (Figure 2). The creek flows above ground on the south side of Interstate 90 (I-90) through a portion of Luther Burbank Park, collecting water from an adjacent ravine. The creek then flows into a stormwater sediment pond with a debris trap, drops at least 30 feet before traveling under I-90 and draining into Lake Washington. During high flow conditions, the pond backs up into the stream; samples were collected 50 to 60 feet upstream of the detention pond where there was visible flow. Water and sediment sampling occurred in Basin 6 from 1999 to 2010; benthic invertebrate sampling occurred annually from 1999 through 2008, with the exception of 2004. Improvements in the forested portion of Basin 6 (upstream of the sampling location) were completed in 1998 and included placement of large woody debris in the channel to form a series of check-dams designed to reduce erosion, capture sediment, and minimize the transport of degraded runoff to Lake Washington. In 2011 the adjacent 800 feet (upstream) will undergo similar

restoration/stabilization improvements. The Washington State Department of Transportation (WDOT) originally maintained the stormwater pond, which also captures sediment and is periodically dredged. Maintenance responsibilities for this facility were transferred from WDOT to the City in 2002.

2.2 Drainage Basin 10

The watercourse within Basin 10 drains the majority of the City's business district/town center as well as single-family and high-density residential neighborhoods (Figure 2). The headwaters flow through three city parks. Sediment and water samples were collected from the south side of the SE 22nd Street crossing from 1999 to 2010; benthic invertebrate sampling occurred annually from 1999 through 2008, with the exception of 2004. Downstream from this point, the creek passes through one of two culverts and then flows north in a concrete box culvert to Lake Washington. In 2003, an improvement project replaced two smaller culverts under SE 22nd Street with one larger and longer box culvert designed to better route large stormflows under this street and across private properties to the north. These flood management improvements were located downstream from the sampling location.

2.3 Drainage Basin 26

The main watercourse within Basin 26 captures flow from neighborhoods consisting primarily of single-family residences (Figure 2). The headwaters include Ellis Pond and its surrounding greenscape. This drainage eventually passes through a steep and confined ravine before flowing into Lake Washington. Sediment and water samples were collected at a public access site at the base of the hill along SE 50th Place just upstream of a wooden footbridge from 2001 through 2010; benthic invertebrate sampling occurred in 2001 through 2003. The channel was armored in 2002 at this access point using large rocks. Sediment and water sampling in Basin 26 began in 2001 and continued until 2010. After passing under the footbridge, the creek passes across one more armored property before draining into Lake Washington. Basin improvements were implemented upstream of the sampling location in September and October of 2005. Slopes were stabilized and the channel was widened and raised with stream rock. Native vegetation was planted along the streambank. Additional restoration/stabilization work between West Mercer Way and Island Crest Way was completed in 2009.

2.4 Drainage Basin 29

The main watercourse in Basin 29 collects and carries stormwater from predominately residential neighborhoods (Figure 2). The creek passes through a steep ravine, in which high flows have led to slope failures and increased sediment transport. Stream restoration and stabilization (550-foot section upstream of sampling location) was completed in 2008. Sample collection (1999-2002) occurred downstream of the proposed project site, but above the point where the creek flows into a tight line and is routed to the west, directly into Lake Washington. The City decided to cease sampling in this drainage after 2002, opting instead to investigate Basin 42.

2.5 Drainage Basin 32

Though the majority of the basin is single family residential, Basin 32 drains the few commercial businesses located on the south end of Mercer Island (Figure 2). This is one of the largest basins on the island, and is unique in that it flows into Lake Washington via a stream channel with a true "mouth." Residential neighborhoods, schools and playfields, and a series of detention ponds also characterize this drainage; most of the development occurred in the 1970s and 1980s. Basin improvements included expansion of the stormwater detention pond at Islander Middle School in 2000, and watercourse stabilization (200 feet) on the east side of West Mercer Way in 2002. Sediment and water samples were collected from 2001 through 2010 at the bottom of Holly Hill Drive on private property adjacent to Lake Washington; benthic invertebrate samples were collected in 2002. To prevent collection of backwater from Lake Washington, the sampling location was established approximately 75 feet upstream from the mouth where the creek flows through a natural stream channel before draining into the lake.

2.6 Drainage Basin 42

Basin 42 drains the southeastern end of Mercer Island (Figure 2). The basin headwaters originate in Pioneer Park and adjacent residential neighborhoods. Steep ravines are present in this area. Overall, this basin has more open space than the other study basins. The City maintains a stormwater sediment pond and catch basin in this basin. After water passes through the facility, the flow is tight-lined to Lake Washington. Samples are collected downstream of Pioneer Park and approximately 10 feet upstream of the facility; sediment samples were collected in the pond. Water and sediment sampling was conducted in Basin 42 from 2003 to 2010. Basin improvements included stream bank stabilization (100-200 feet) on the west side of East Mercer Way, upstream of the sampling location.

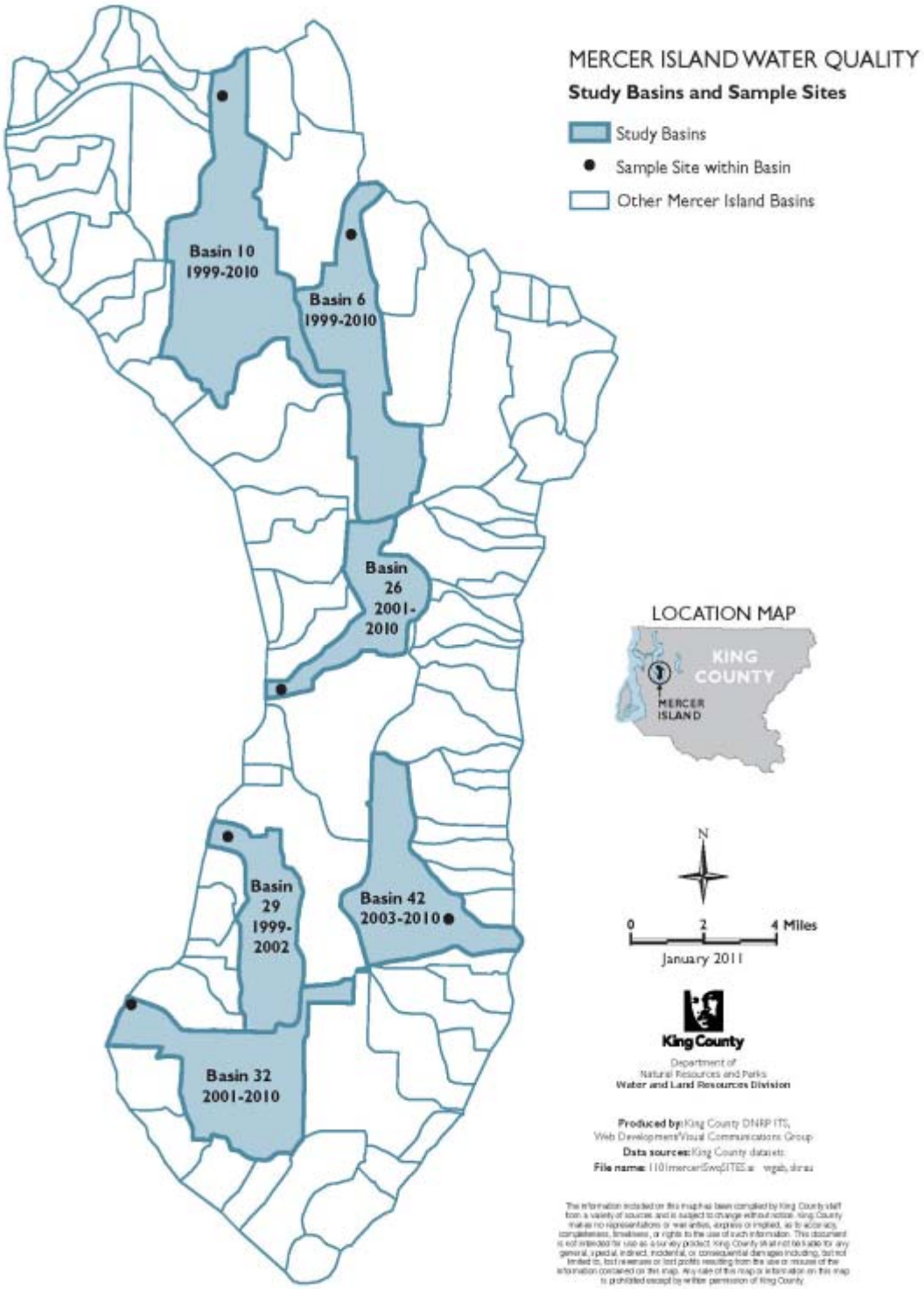


Figure 1. Study basins and sample sites.

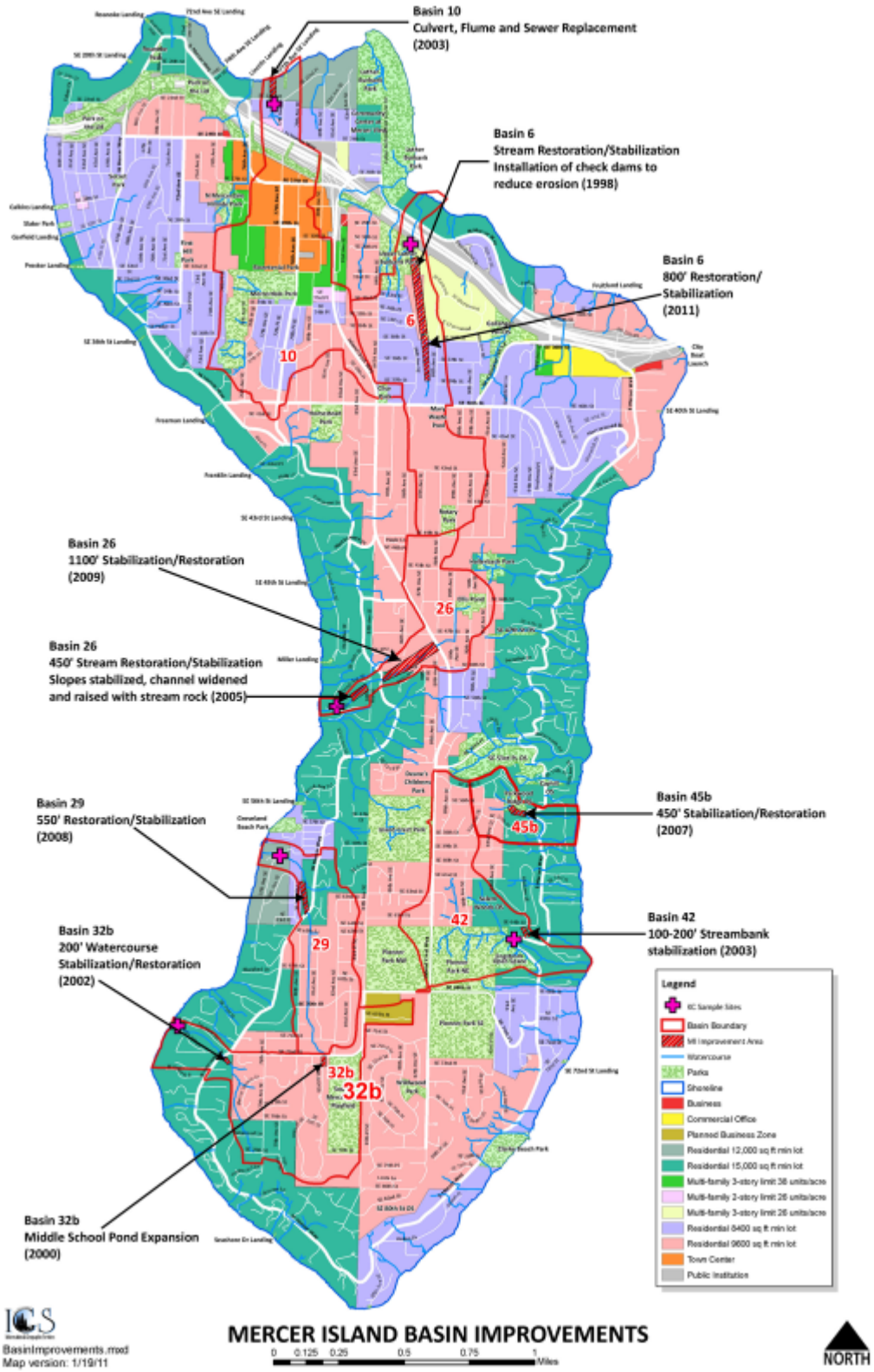


Figure 2. Mercer Island land use, drainage basins, and basin improvement projects.

3.0. METHODS

In 2008, 2009, and 2010 water samples were collected during storm events. Baseflow monitoring of conventionals, bacteria, and herbicides was added in early 2009. Sediment and macroinvertebrates (2008 only) samples were collected during summer low flow conditions. The following sections detail specific methodology, as well as WQS and freshwater sediment quality guidelines (FSQG) which were used to screen the data for potential problems.

3.1 Stormwater Sampling Criteria

Stormwater samples were collected during events that were most likely to result in transport of urban stormwater and sediment. Various factors affect pollutant load and transport, such as length of the antecedent dry period, rates of atmospheric deposition, storm intensity, land use, and ground cover (Bertrand-Krajewski et al. 1998, Goonetilleke et al. 2005). Storm sampling criteria were derived from the former King County Storm Watcher Program. These criteria are based on three conditions: cumulative precipitation over a given time period, antecedent dry conditions, and stream stage. Ideally, samples were collected after a particular storm reached a cumulative precipitation threshold (Table 3). Field staff monitored real-time rainfall data when deciding whether to sample during a particular storm and focused collection of water samples on storm events that had a three-day pre-storm period with an overall rainfall of 0.25 inches or less.

Table 3. Precipitation intensity criteria for stormwater sampling.

Time Period (hours)	Precipitation (inches)
6	0.25 - 0.5
12	0.5 - 0.75
24	≥ 1.0

Precipitation data were collected using a continuous recording tipping bucket rain gauge with an attached data logger recording in 0.01-inch increments at 5-minute intervals. During the sampling season, field staff monitored the King 5 SchoolNet Weather website (http://www.instaweather.com/king/) to determine when to collect samples. Subsequent analyses were conducted by downloading precipitation data from King County's Hydrologic Information Center (http://green.kingcounty.gov/wlr/waterres/hydrology/default.aspx/), using the Mercer Island rain gauge (MERC; 2001-06) located at the Mercer Island school district administration offices. Detailed records allow King County staff to report rainfall conditions before and during the storm event, as well as to determine whether sampling criteria were met.

3.2 Field Sampling Methods

Physical, chemical, and biological parameters were analyzed in 2008, 2009, and 2010 to evaluate water and sediment quality in each basin. Sampling was divided between storm events, baseflow summer sampling, and sediment sampling (Table 4).

To characterize water quality in the five basins during periods of elevated surface water runoff, grab samples were taken during eight storm events over the 3-year period. Water samples collected from the basins during storm events were analyzed for the following parameters: fecal coliform bacteria, total suspended solids (TSS), and field parameters including dissolved oxygen (DO), temperature, conductivity, pH, turbidity, and flow discharge. Hardness and dissolved metals (Cu, Pb, Zn, and Cr) were analyzed in Basins 10 and 32b for six storm events in 2009 and 2010. Dissolved metals were sampled in 2008 but hardness was inadvertently not analyzed preventing a comparison with guidelines. Samples for analysis of ten chlorinated herbicides and seven organophosphate pesticides were collected during four storm events from all five basins.

Between March 2009 and September 2010 grab samples were collected during seven low flow events and analyzed for the following parameters: fecal coliform bacteria, field parameters (listed above), and eight chlorinated herbicides. Previously, chlorinated herbicides were sampled during storm events which typically occur between October and April. The addition of summer sampling for this parameter was intended to provide a better measure of the presence of herbicides during the high use time of year.

Table 4. Sample dates and parameters measured in 2008, 2009, and 2010.

Sample Date	Sample Type	Water						Sediment	
		Field Parameters	Conventionals	NPO[1]	Nutrients	Metals	Herbicides / Pesticides [3]	Sediment [4]	Macro Invertebrates [5]
3-Jun-2008	Storm	X	X	X	X	X [1]	X		
7-Aug-2008	Base								X
12-Dec-2008	Storm	X	X	X	X	X [1]			
30-Dec-2008	Base [6]							X	
14-Mar-2009	Storm	X	X	X	X	X	X		
28-Mar-2009	Storm	X	X	X	X	X	X		
22-Jun-2009	Base	X	X				X		
20-Jul-2009	Base	X	X				X		
24-Aug-2009	Base	X	X				X		
21-Sep-2009	Base	X	X				X	X	
26-Oct-2009	Storm	X	X			X			
5-Nov-2009	Storm	X	X			X			
4-Jan-2010	Storm	X	X			X			
11-Mar-2010	Storm	X	X			X			
9-Jun-2010	Base	X	X				X		
6-Jul-2010	Base	X	X				X		
27-Jul-2010	Base							X	
2-Aug-2010	Base	X	X				X		
15-Sep-2010	Base	X	X				X		

1. Non-polar Oil Hydrocarbon
2. Metals collected in 2008 but not Hardness preventing comparison to WQS.
3. Diazinon discontinued in 2009.
4. Sediment in 2009 and 2010 collected only at Stations 10 and 32b.
5. Invertebrates collected once at stations 6, 10 and 42 in 2008 during low flow conditions.
6. Invertebrate sampling done in December to replace missed August event.

3.2.1 Water Quality Parameters

Field parameters, including stream velocity, water temperature, dissolved oxygen (DO), pH, conductivity, and turbidity, were collected during both storm and base flow events in 2008 through 2010. Water quality field parameters were monitored from the thalwegs of the main watercourses in each basin (King County 2005). A Swoffer 2100 velocity meter was used to collect velocity data for calculating stream flow (Figure 3). A Hydrolab Series 4 sonde and datalogger was used to analyze temperature, pH, conductivity, and DO; and a Hach 2100P turbidimeter was used to measure turbidity in the field.

This assessment identifies a limited number of contaminants typically present in urban stormwater that may ultimately impact water quality in Lake Washington. Water quality parameters included in this analysis included total suspended solids (TSS), non-polar oil (NPO), nutrients (total phosphorus [TP], ortho-phosphorus [OP], and total nitrogen [TN]), bacteria (fecal coliform and *E. coli*), benthic macroinvertebrates, hardness, dissolved metals (copper, lead, zinc, and chromium), ten chlorinated herbicides, and seven organophosphate pesticides (Table 1).

All samples were processed by the King County Environmental Laboratory (KCEL) or a certified lab contracted by KCEL. Water samples were collected according to Quality Assurance/Quality Control (QA/QC) protocols provided by KCEL (King County 2005). Specific sample collection techniques varied by parameter. Field replicates were discontinued in 2009.

Laboratory results from the KCEL may be "qualified" as less than the method detection limit (MDL) or the reporting detection limit (RDL). Values less than the MDL indicate a parameter is not present in the sample above this level. Values greater than the MDL, but less than the RDL, indicate confidence that the parameter is present; however, the actual concentration is uncertain. (King County 2004). Values greater than the RDL are considered reliable after undergoing laboratory QA/QC. When metal levels were below the MDL, the concentration was conservatively reported as the MDL. A complete listing of MDLs accompanies each laboratory report in Appendix A.

3.2.2 Macroinvertebrates

Benthic macroinvertebrate samples were collected from Basins 6, 10, and 42 under summer low flow conditions in August 2008 (Table 4). Stream flows were too low in Basins 26 and 32b to use the invertebrate sampling equipment; no samples were collected. Sampling techniques followed standardized King County protocols, which require a minimum of one inch of water to pass through the Surber sampler (King County 1999). Samples were collected from three riffles and combined into one composite sample per site. Taxonomic analyses were conducted by ABR, Inc. in Forest Grove, OR (Appendix B).

3.2.3 Sediment Sampling

Annual collection of sediment samples for analysis of metals (copper, lead, zinc, and chromium) and NPO enhanced the overall basin assessment by evaluating pollutants that may be potentially resuspended and transported to Lake Washington. Because sediments move through a system less quickly than water, they can provide more integrated information on contaminants that may be present in the watershed. Sediment was collected from depositional zones within each stream

using 7.5 cm diameter core tubes. Samples were collected according to QA/QC protocols provided by KCEL (King County 2005) from depositional areas, and were analyzed by KCEL for metals and NPO compounds, and particle size distribution in 2009 and 2010.

3.3 Data Analysis

Water quality data (storm and baseflow samples) for the Mercer Island drainage basins were obtained from the KCEL database. Data were compared with water and sediment quality standards and guidelines as noted in Table 5.

3.3.1 Water Quality Criteria

Washington State WQS are currently only established for certain parameters. If no appropriate guidelines or literature-based effect thresholds were available, the results were compared to available water and sediment quality data for regional streams. The sample collection techniques (grab samples) used in this study limited the standards that could be used for comparison because they only reflected a snapshot in time. For example, temperature measured instantaneously during a sampling event does not provide context for how the temperature fluctuates diurnally or between sampling events. Temperature WQS are based on a seven day average, so the comparisons made in this report are qualitative, and designed to help screen for potential water quality problems. Further, grab samples that are analyzed for contaminants (metals and pesticides) cannot be compared with chronic WQS, because these standards require an analysis of what the organism would be exposed to over a longer time period. Therefore, the water quality data were compared to acute WQS, and then screened against chronic WQS for informational purposes and to aid in the discussion and recommendations sections.

Washington State WQS were revised in 2006 to include species and life stage-specific criteria for aquatic life (WDOE 2006). Salmonids do not enter and spawn in Mercer Island streams; however, the graveled stream mouths and nearshore areas in Lake Washington serve as important spawning and rearing habitat. As such, discharge from these streams could potentially alter water quality in Lake Washington and impact available salmonid habitat. In terms of field parameters, temperature and DO criteria became more stringent with adoption of the revised WQS in 2006. The WQS indicate that criteria for any tributary stream to Lake Washington be based on the “Core Summer Salmonid Habitat” designated use category (Table 5).

Dissolved metal concentrations were compared to hardness adjusted acute water quality standards for aquatic life. Standards for all metals evaluated here are hardness-dependent; the softer the water, the greater the toxicity. As previously mentioned, chronic toxicity cannot be fully assessed because grab samples only provide information for a snapshot in time; evaluation of chronic metal toxicity would require additional sampling. Since very few herbicides and pesticides were detected above the MDL, WQS or literature-based thresholds are only presented for detected compounds (Table 5).

Table 5. Water quality standards (WQS) and appropriate guidelines used to evaluate data.

Category	Parameter	Criteria/Guideline	Type	Reference
Conventional/ Other	Temperature	<16°C	WA WQS	WDOE 2006
	Dissolved oxygen	>9.5 mg/L	WA WQS	WDOE 2006
	pH	6.5-8.5	WA WQS	WDOE 2006
	Conductivity	n/a		
	Turbidity	<5 NTU increase when background ? 50 OR <10% increase when background >50 NTU	WA WQS	WDOE 2006
	TSS	n/a		
	Hardness	n/a; range: 16.8 - 280 µg/L		
	NPO	n/a		
Nutrients	TP[1]	n/a		
	OP[1]	n/a		
	TN[1]	n/a		
Biological	Fecal coliform	<100 colonies/100 mL	WA WQS	WDOE 2006
	E. coli	n/a		
	Benthic macroinvertebrates	B-IBI	Regional stream health index	Karr et al. 1986
Dissolved metals	Chromium[2]	range: 127.32 - 1275.23[2]	WA WQS	WDOE 2006
	Copper[2]	range: 3.17 - 44.89[2]	WA WQS	WDOE 2006
	Lead[2]	range: 6.67 - 239.52[2]	WA WQS	WDOE 2006
	Zinc[2]	range: 25.25 - 273.83[2]	WA WQS	WDOE 2006
Chlorinated herbicides	2,4,5-T	n/a		
	2,4-D	30 µg/L	Literature-based threshold	Westerdahl and Hall 1983
	Dicamba	14000 µg/L	EPA criteria	USEPA 2005a
	MCPP	2573.5 µg/L	Literature-based threshold	Kirby and Sheahan 1994
	MCPA	380 µg/L	EPA criteria	USEPA 2004
Organophosphate pesticides	Chlorpyrifos	0.083 µg/L	WA WQS	WDOE 2006
	Diazinon	0.3397 µg/L	EPA criteria	USEPA 2005b
	Malathion	2 µg/L	EPA criteria	USEPA 2000

[1] compared to regional streams

[2] criteria calculated using hardness (WDOE 2006)

n/a = not available

3.3.2 Macroinvertebrates

Macroinvertebrate community composition data downloaded from the Puget Sound Stream Benthos database (http://pugetsoundstreambenthos.org) used to develop a Benthic Index of Biotic Integrity (B-IBI) score, calculated from metrics representing taxa richness, pollution tolerance, feeding ecology, and population structure (Kleindl 1995, Fore et al. 1996, Karr and Chu 1999; Appendix C). The B-IBI is a tool designed to evaluate the health of 2nd or 3rd order streams; scores range from 10 to 50 (Table 6). The Mercer Island drainage basins of interest are generally very small with flashy hydrologic regimes, and are not considered 2nd or 3rd order. Therefore, these streams are not expected to function in the same way as systems for which this scoring system was devised. However, we have used this tool to compare sites, and evaluate temporal trends through 2008. Due to the natural physical limitations of the Mercer Island drainages, the benthic macroinvertebrate communities are not likely to reach the abundance and diversity of other larger systems in the region. Macroinvertebrate sampling was discontinued in 2009 as it was not considered an appropriate index to meet the objectives of the Mercer Island Monitoring Program.

Table 6. Classes of biological condition as determined by B-IBI. Modified from Karr et al. (1986) by Morley (2000).

Biological Condition	B-IBI Range	Description
Excellent	46 - 50	Comparable to least disturbed reference condition; overall high taxa diversity, particularly of mayflies, stoneflies, caddisflies, long-lived, clinger, and intolerant taxa. Relative abundance of predators high.
Good	38 - 44	Slightly divergent from least disturbed condition; absence of some long-lived and intolerant taxa; slight decline in richness of mayflies, stoneflies, and caddisflies; proportion of tolerant taxa increases.
Fair	28 - 36	Total taxa richness reduced - particularly intolerant, long-lived, stonefly, and clinger taxa. Relative abundance of predators declines; proportion of tolerant taxa continues to increase.
Poor	18 - 26	Overall taxa diversity depressed; proportion of predators greatly reduced as is long-lived taxa richness; few stoneflies or intolerant taxa present; dominance by three most abundant taxa often very high.
Very Poor	10 - 16	Overall taxa diversity very low and dominated by a few highly tolerant taxa; mayfly, stonefly, caddisfly, clinger, long-lived and intolerant taxa largely absent. Relative abundance of predators very low.

3.3.3 Freshwater Sediment Quality Guidelines

Currently, there are no formally promulgated freshwater sediment standards for Washington State; however, a number of guidelines have been developed. Two different types of guidelines were used to evaluate the stream sediment data: Washington State Department of Ecology's Draft Freshwater Sediment Quality Values (Avocet Consulting and SAIC 2003) and the guidelines developed by Ingersoll et al. (1996) and Smith et al. (1996) (Table 7). There are currently no standards or guidelines for NPO levels in sediment.

The guidelines developed by Ingersoll et al. (1996) and Smith et al. (1996) are based on two levels of protection. The threshold effects level (TEL) is an estimate of the concentration below which no adverse biological effects are expected to occur, and the probable effects level (PEL) is the concentration above which adverse biological effect would be frequently expected to occur. The specific values used here are based on those developed by Smith et al. (1996).

The guidelines developed for Ecology by Avocet and SAIC (2002, 2003) are based on a "Floating Percentile" approach and include three levels of protection. The two biologically based values include the sediment quality standard (SQS), which is an estimate of the concentration below which biological effects are not expected to be observed, and the cleanup screening level (CSL), which is an estimate of the concentration above which adverse effects would be expected. The third level of protection, which is not based on biological significance, is referred to as the "STAT" which represents concentration that was statistically significant when compared to the control (Avocet Consulting 2003). Since this value does not provide biological information, only the SQS and CSL levels were used for comparison. More detailed information on the derivation of these guidelines can be found in the references listed above.

We compared overall average sediment metal concentrations by site (1999-2010) and annual metal concentrations to all four of these guidelines to provide a framework within which sediment metals data could be interpreted.

Table 7. Suggested freshwater sediment quality guidelines (mg/kg dry weight).

Metal	Threshold Effects Level[1]	Probable Effects Level[1]	Sediment Quality Standard[2]	Cleanup Screening Level[2]
Chromium	37.3	90	95	100
Copper	35.7	196.6	80	830
Lead	35	91.3	335	430
Zinc	123.1	314.8	140	160

1. Smith et al. 1996

4.0. RESULTS AND DISCUSSION

The results sections begins by providing a summary of the data collected in 2008, 2009, and 2010 by parameter (Table 1) and highlights inter-annual patterns (Section 4.1). Also included is a basin- by-basin analysis of water quality indicators, as well as comparison of pre- and post-basin improvement conditions, focusing on parameters that were either above WQS or changed after basin improvements were implemented (Section 4.2). This format will aid City staff in making future decisions related to specific basin improvements and source control. Because some of the water quality parameters do not have appropriate standards or guidelines, regional comparisons were used to provide context. (For a detailed view of the raw data collected in the 2008 – 2010 effort, refer to the Appendices at the end of this report.)

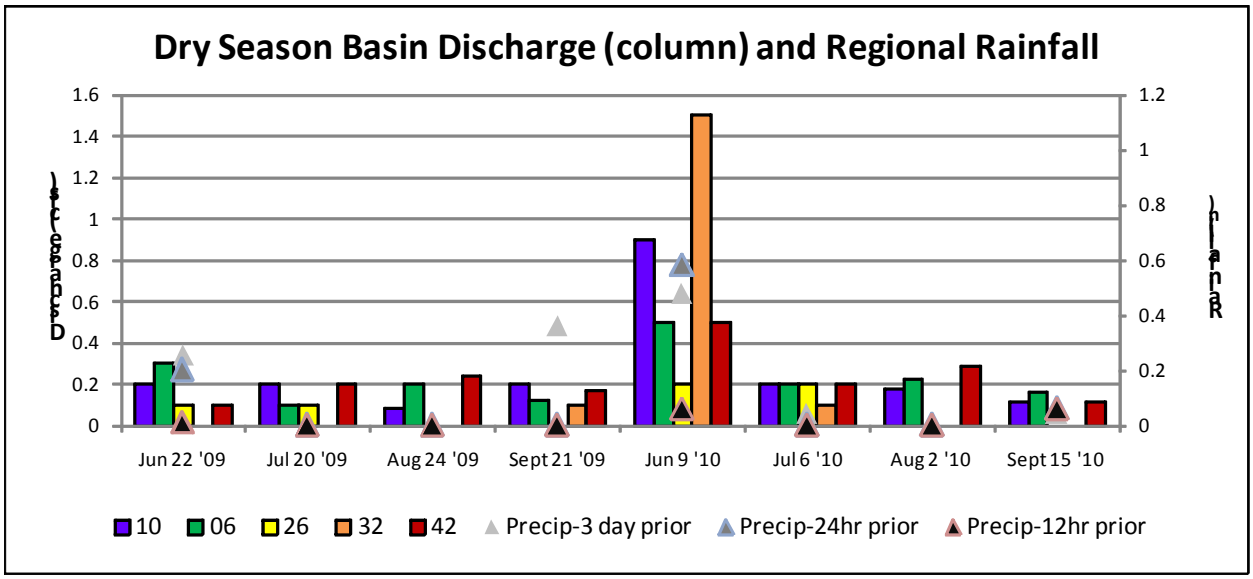
As previously discussed, sampling efforts occurred in several types of drainages – commercial (Basin 10), residential with light commercial (Basin 32b), and residential with steep ravines (Basins 6, 26, 29, and 42). Water quality problems identified in these subbasins could potentially be attributed to commercial and/or residential landuse practices, or to landscape erosion. These land use categories are identified in Figure 2. Drainages in commercial areas are depicted in shades of green and blue, and drainages in residential areas with erosive ravines are depicted in shades of yellow, orange, and red.

4.1 2008 - 2010 Results and Discussion

Storm samples were collected twice in 2008, four times in 2009, and twice in 2010; baseflow sampling occurred four times each in 2009 and 2010 (Table 4). On these dates, staff collected field parameter measurements and water quality samples. Sediment samples were collected at all sites in 2008, but only in basins 10 and 32b in 2009 and 2010. Macroinvertebrate samples were collected only once in 2008.

4.1.1 Sampling Events and Rainfall

The largest storm event sampled was on October 26, 2009, with antecedent rainfall (24-hour) rainfall of 1.08 inches, which also coincided with the highest discharge measured during any of the sampling events (Figure 3). In contrast, antecedent rainfall (24-hour) prior to baseflow monitoring ranged from zero to 0.58 inches. Both Basins 10 and 32 have very flashy flows due to impervious drainages (Jean Powers, personal communication, Feb 22, 2011). The highest stream discharge during both storm and baseflow events were measured in Basin 32. Higher discharges measured in Basin 32 than Basin 10 is likely the due to the fact that Basin 32 is measured earlier in the sampling event. Basin 10 is often the last site sampled during a monitoring event and peak flows may well have passed prior to the discharge measurement.



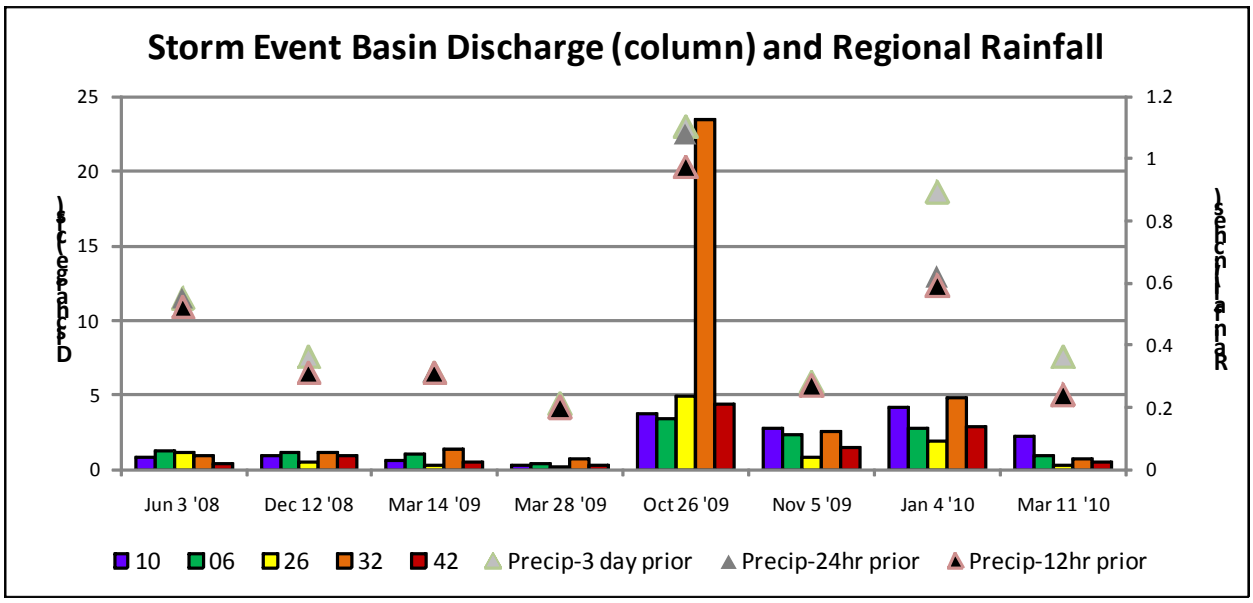


Figure 3. Stream discharge (column) measured in each basin at time of sampling (cubic feet per second), rainfall (triangle) measured 3 days, 24 hours, and 12 hours prior to each sampling event (inches) at SeaTac in 2008, 2009, and 2010.

4.1.1.1 Conventional/Other Parameters

Conventional and other water quality parameters measured in 2008, 2009, and 2010 are summarized in Table 8. Temperature exceeded the 16 °C WQS twice in Basin 10 during the summer of 2009. In general, DO did not meet the WQS of 9.5 mg/L at any sites during baseflow sampling events with a few exceptions, whereas during most storm event sampling DO levels met the WQS. The pH levels measured during all events were within the range specified by the WQS (range: 7.0-8.5).

Specific conductivity was variable, but consistently higher during the baseflow than storm events, with means of 266 µS/cm and 111 µS/cm, respectively. Conductivity is a measure of water's capacity to convey an electric current and is a coarse measure of the total amount of dissolved charged substances in the water. Therefore, it can be used as a general indicator of water quality. The contrast between the baseflow and storm event sampling is likely a dilution effect – higher precipitation resulting in greater dilution of the dissolved ions because precipitation generally has fewer dissolved substances than baseflow water. In contrast, turbidity readings and TSS values were exponentially higher during storm events than baseflow sampling indicating that erosion that occurs in these basins during high flow events. Turbidity measures the cloudiness in water caused by the suspension of tiny particles.

NPO compounds include gasoline and petroleum products, and are common components in stormwater runoff from both residential and commercial land uses. Sampling for NPO compounds was discontinued after March 2009. Concentrations of NPO were all less than the MDL for all samples collected, with the exception of the June 2008 sample in Basin 10 (Appendix A).

Table 8. Conventional/other water quality parameters measured in 2008, 2009, and 2010. Highlighted values indicate values that exceeded State WQS (listed by parameter).

BASIN	Category	Date		Temperature <16°C*	DO >9.5 mg/L*	pH 6.5-8.5*	Conductivity (µS/cm)	Turbidity	TSS (mg/L)	NPO (mg/L)
10	commercial	3-Jun-2008	Storm	14.9	9.0	7.2	91.2	NA	12	3.21
		12-Dec-2008	Storm	8.7	10.4	7.3	85.6	15	61	<MDL
		14-Mar-2009	Storm	7.5	11.4	7.3	103.5	13	7	<MDL
		28-Mar-2009	Storm	8.3	10.8	7.5	134	13	12	<MDL
		22-Jun-2009	Base	14.7	7.2	7.7	374	2	1	
		20-Jul-2009	Base	16.9	7.5	7.7	310	2	2	
		24-Aug-2009	Base	16.6	7.2	7.8	299	1	<MDL	
		21-Sep-2009	Base	15.9	7.8	7.7	299	1	1	
		26-Oct-2009	Storm	10.5	10.4	7.5	93.2	135	11	
		5-Nov-2009	Storm	12.8	10.0	7.1	52	11	8	
		4-Jan-2010	Storm	8.1	12.2	7.1	88.9	47	29	
		11-Mar-2010	Storm	9.1	11.8	7.4	94.6	15	11	
		9-Jun-2010	Base	15.0	9.0	7.4	138	12	6	
		6-Jul-2010	Base	15.0	8.5	7.7	289	2	<MDL	
		2-Aug-2010	Base	15.6	7.0	7.8	375	2	<MDL	
		15-Sep-2010	Base	15.9	7.6	7.8	358	1	<MDL	
6	residential	3-Jun-2008	Storm	13.5	9.8	7.3	72.2	NA	240	<MDL
		12-Dec-2008	Storm	7.1	11.4	7.5	104.5	37	20	<MDL
		14-Mar-2009	Storm	5.9	12.3	7.6	128	13	13	<MDL
		28-Mar-2009	Storm	6.9	12.4	7.7	150	7	11	<MDL
		22-Jun-2009	Base	12.9	9.4	7.7	225	2	2	
		20-Jul-2009	Base	15.7	8.5	7.8	325	1	2	
		24-Aug-2009	Base	13.8	9.1	7.9	323	1		
		21-Sep-2009	Base	13.0	9.7	7.7	313	1		
		26-Oct-2009	Storm	12.1	10.2	7.3	120	19	216	
		5-Nov-2009	Storm	11.3	10.6	7.4	86	27	50	
		4-Jan-2010	Storm	7.2	11.7	7.5	82.5	63	166	
		11-Mar-2010	Storm	7.3	12.7	7.7	120	14	20	
		9-Jun-2010	Base	13.1	10.0	7.8	189	6	11	
		6-Jul-2010	Base	13.0	9.2	7.8	295	3	11	
		2-Aug-2010	Base	13.7	9.3	7.9	311	2	2	
		15-Sep-2010	Base	13.6	9.2	7.9	323	1	1	
26	residential	3-Jun-2008	Storm	11.9	10.0	7.5	164	NA	46	<MDL
		12-Dec-2008	Storm	7.6	10.9	7.5	123	96	31	<MDL
		14-Mar-2009	Storm	5.5	12.2	7.5	148	67	81	<MDL
		28-Mar-2009	Storm	6.9	12.1	7.7	178	32	57	<MDL
		22-Jun-2009	Base	12.7	9.8	7.8	260	7	13	
		20-Jul-2009	Base	15.9	9.1	7.9	296	2	5	
		24-Aug-2009	Base	14.6	9.1	8.0	306	2	7	
		21-Sep-2009	Base	13.3	10.3	7.7	305	1	2	
		26-Oct-2009	Storm	10.5	10.1	7.2	60	388	492	
		5-Nov-2009	Storm	10.4	10.6	7.7	241	312	358	
		4-Jan-2010	Storm	6.9	11.8	7.3	78.6	93	147	
		11-Mar-2010	Storm	7.3	12.3	7.6	205	13	15	
		9-Jun-2010	Base	12.8	9.5	7.7	209	8	8	
		6-Jul-2010	Base	13.2	9.2	7.7	277	2	2	
		2-Aug-2010	Base	14.7	9.1	7.0	289	4	5	
		15-Sep-2010	Base	14.1	8.7	7.9	305	3	2	

Table 8, continued

BASIN	Category	Date		Temperature <16°C*	DO >9.5 mg/L*	pH 6.5-8.5*	Conductivity (µS/cm)	Turbidity	TSS (mg/L)	NPO (mg/L)
32b	residential	3-Jun-2008	Storm	12.9	10.0	7.1	60.3	NA	20	<MDL
		12-Dec-2008	Storm	6.9	11.9	7.4	76.4	39	33	<MDL
		14-Mar-2009	Storm	5.9	12.3	7.4	78.9	15	18	<MDL
		28-Mar-2009	Storm	7.0	12.4	7.6	118	10	9	<MDL
		22-Jun-2009	Base	12.9	8.2	7.3	186	2	4	
		20-Jul-2009	Base	15.8	6.9	7.4	257	1	3	
		21-Sep-2009	Base	13.6	8.1	7.3	137	3	7	
		26-Oct-2009	Storm	10.6	11.0	7.4	64.3	58	95	
		5-Nov-2009	Storm	11.7	10.4	7.2	64.3	29	34	
		4-Jan-2010	Storm	7.0	11.9	7.3	69.3	43	58	
		11-Mar-2010	Storm	7.6	12.6	7.4	85.9	13	11	
		9-Jun-2010	Base	14.7	9.6	7.7	116	18	27	
		6-Jul-2010	Base	13.3	8.6	7.6	163	3	1	
		2-Aug-2010	Base	14.3	7.9	7.4	214	1	1	
		15-Sep-2010	Base	14.2	7.4	7.3	200	1	<MDL	
42	residential	3-Jun-2008	Storm	11.5	10.1	7.4	152	NA	54	<MDL
		12-Dec-2008	Storm	6.8	11.4	7.4	110	61	103	<MDL
		14-Mar-2009	Storm	5.3	11.9	7.5	139	36	45	<MDL
		28-Mar-2009	Storm	6.6	11.7	7.6	149	16	20	<MDL
		22-Jun-2009	Base	12.2	9.1	7.6	256	2	3	
		20-Jul-2009	Base	15.0	8.9	7.7	290	2	5	
		24-Aug-2009	Base	13.7	8.4	7.8	292	2	3	
		21-Sep-2009	Base	12.9	9.1	7.6	283	1	2	
		26-Oct-2009	Storm	10.0	10.8	7.2	75.8	509	666	
		5-Nov-2009	Storm	10.2	10.3	7.5	153	171	179	
		4-Jan-2010	Storm	6.9	11.7	7.3	83.7	132	197	
		11-Mar-2010	Storm	7.0	12.4	7.6	163	23	31	
		9-Jun-2010	Base	12.2	9.6	7.6	179	20	24	
		6-Jul-2010	Base	12.6	9.1	7.6	256	2	2	
		2-Aug-2010	Base	13.6	8.2	7.7	276	5	11	
		15-Sep-2010	Base	13.3	8.9	7.7	286	2	7	

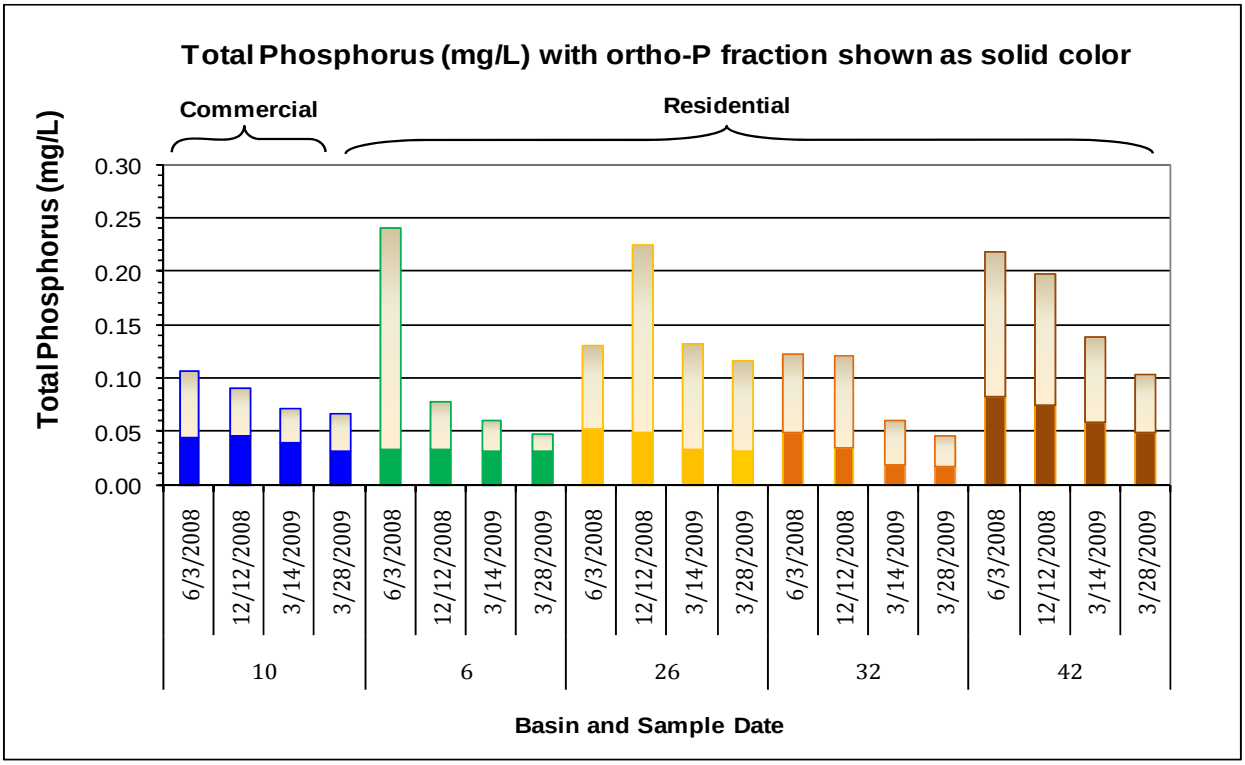
*WA WQS

NA = not analyzed

4.1.2 Nutrients

In 2008 and March 2009, TP and OP concentrations ranged from 0.05-0.24 mg/L, and 0.02 – 0.08 mg/L, respectively (Figure 4). TN ranged from 0.55 to 1.30 mg/L. (Nutrient sampling was discontinued after March 2009.) Overall, phosphorus tended to be highest in Basins 26 and 42, and nitrogen was generally higher in Basins 26, 32, and 42. There are currently no WQS or guidelines for nutrients.

Analyses of TP and OP patterns can reveal differences among drainages in terms of potential phosphorus sources. For example in June 2008 Basin 6 showed TP spikes with corresponding high TSS and relatively low OP, indicating that the phosphorus was associated with particulate matter. By comparison, Basin 10 and Basin 42 had relatively higher fractions of OP and relatively low TSS in the June 2008 sample, suggesting a dominant presence of dissolved phosphorus, possibly associated with fertilizers or animal waste. OP is the soluble or bioavailable component of TP, and it supports biological production such as algal growth. However, phosphorus bound to sediments may also become bioavailable once it settles to the lake bottom. Therefore, due to concerns about algal blooms in Lake Washington, preventing or reducing the phosphorus load to the lake in either form should be a goal. Legislation is currently being proposed that would protect lake water quality through a statewide ban on the sale of phosphorus based lawn fertilizer.



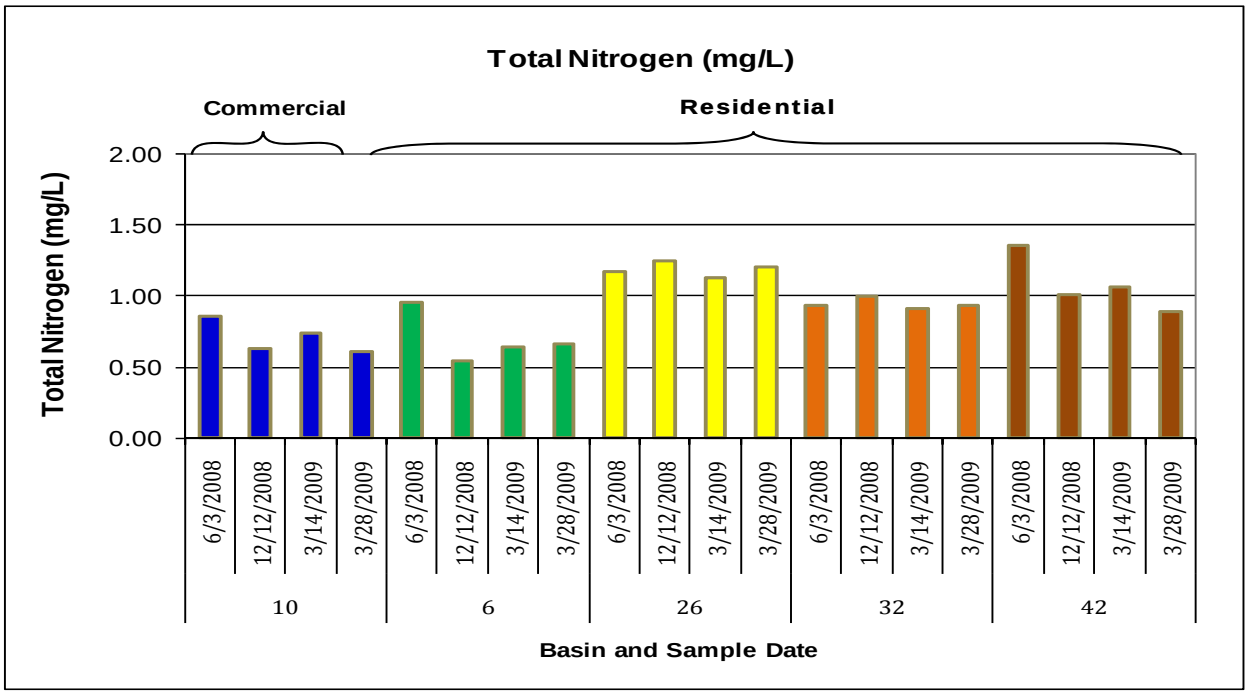
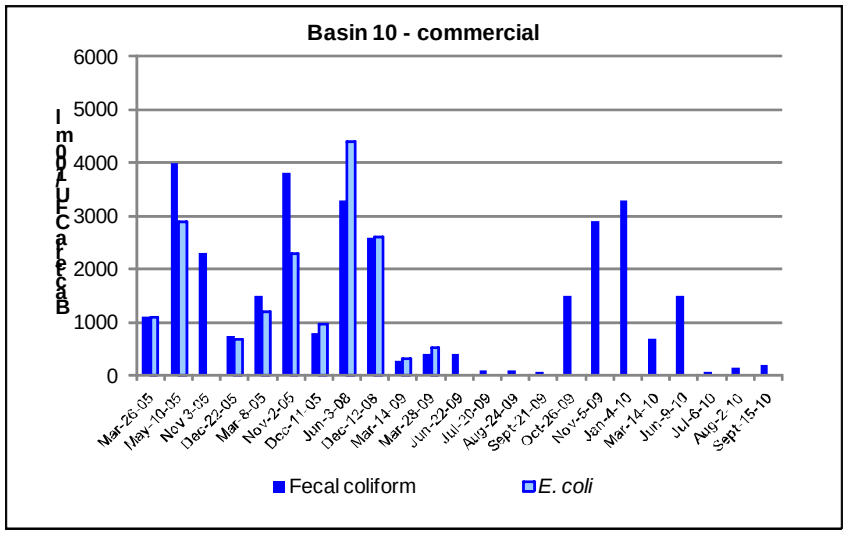


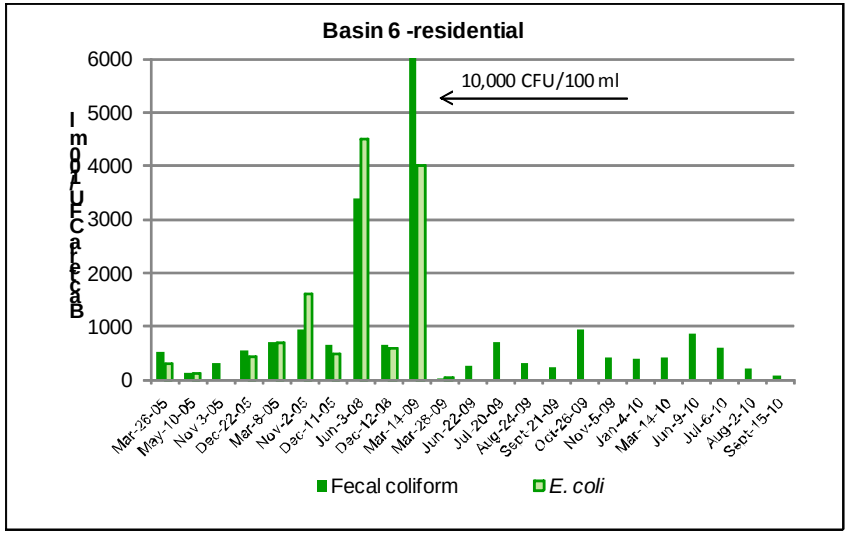
Figure 4. Orthophosphorus (solid portion of column) as a fraction of total phosphorus (mg/L). Total nitrogen (mg/L) not split into fractions. Samples collected during storm events in 2008 and 2009.

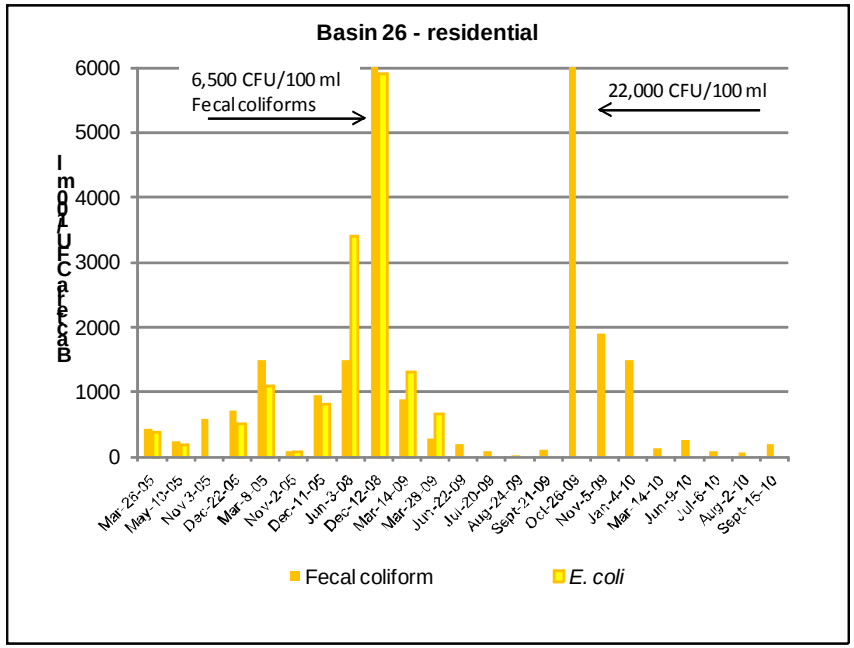
4.1.3 Biological Parameters

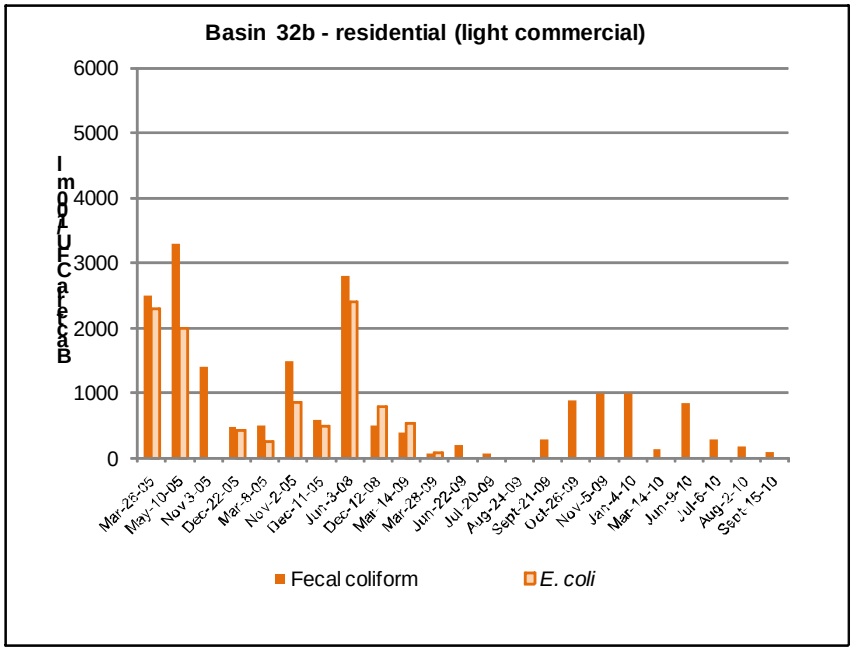
The state Extraordinary Primary Contact Recreation criteria for fecal coliform bacteria reads as follows: "Fecal coliform organism levels must not exceed a geometric mean value of 50 colonies/100 mL, with not more than 10 percent of all samples (or any single sample when less than ten sample points exist) obtained for calculating the geometric mean value exceeding 100 colonies/100 mL" (Ecology 2006). It is not recommended to calculate the geomean when data is collected over thirty days apart. Therefore, the second part of the criteria (<100 colonies/mL) is used here for determining exceedances. As an additional point of reference, King County uses the Ten State Standard for fecal coliform bacteria when determining beach closures as part of their Swimming Beach Monitoring Program. The Ten State Standard is: a geometric mean of 200 CFU/100ml (colony forming units per 100 milliliter) fecal coliform with no single sample exceeding 1000 CFU/100ml. Again, the same restrictions on calculating the geomean apply.

In general, fecal coliform levels were much lower during baseflow sampling than during storm events (Figure 5). With the exception of samples collected on March 28, 2009, all samples collected during the eight storm events in 2008-10 had fecal coliform levels that exceeded the WQS (<100 colonies/100 mL). The March 28 sampling event had relatively low discharges and antecedent rainfall relative to the other storm events (Figure 3). High fecal coliform bacteria levels in stormwater are typical for urban streams, though the 22,000 CFU/100 ml measured in Basin 6 on October 26, 2009 is exceptionally high for our area. Storm samples collected in Basin 10 have consistently had fecal coliform levels greater than 1000 CFU (Figure 5), as has Basin 26. More recent storm samples collected in Basin 6 and 32b have been below 1000 CFU. Elevated bacteria levels can indicate the presence of human or animal waste (see also http://dnr.metrokc.gov/wlr/waterres/swimbeach/aboutswimbch.htm). However, the specific bacteria sources in the study basins cannot be determined without additional specialized testing.


Basin 10 - commercial
Fecal coliform
E. coli


Basin 6 -residential
10,000 CFU/100 ml
Fecal coliform
E. coli


Basin 26 - residential
6,500 CFU/100 ml
Fecal coliforms
22,000 CFU/100 ml
Fecal coliform
E. coli


Basin 32b - residential (light commercial)
Fecal coliform
E. coli

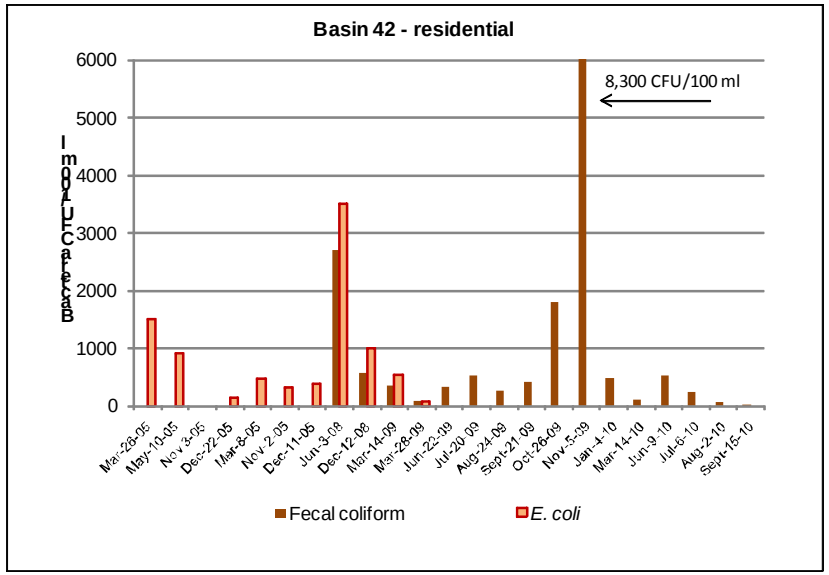


Figure 5. Fecal coliform and *E. coli* in five Mercer Island streams in 2005 through 2010. Sampling for E. coli was discontinued in 2009.

Macroinvertebrate samples were collected from: Basins 6, 10, and 42 in 2008 (Figure 6). B-IBI values for these streams in 2008 were 14, 12, and 20, respectively; categorizing Basins 6 and 10 as "very poor" and Basin 42 as "poor" (Table 6). For purposes of comparison, B-IBI scores from all years of this study have been presented in Figure 6.

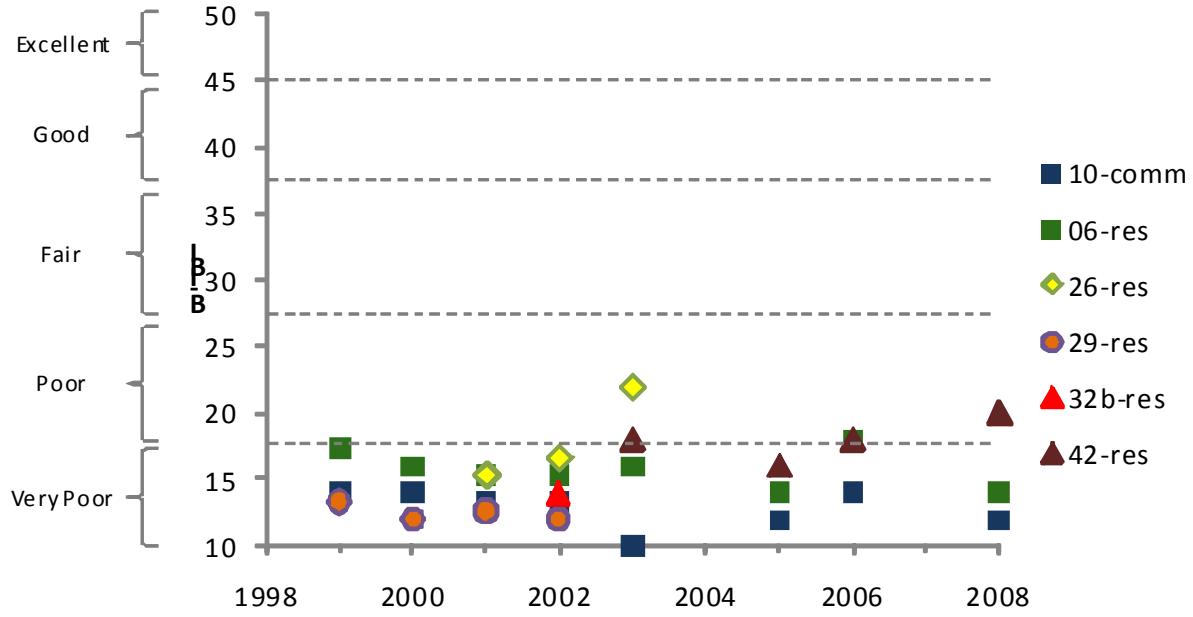


Figure 6. Benthic Index of Biotic Integrity (B-IBI) (1999-2010; samples not collected in 2004, 2007, or after 2008). Basins are designated as commercial (comm) or residential (res). Missing data points represent low flow conditions where samples could not be collected.

The above results indicate that Mercer Island drainage basins had low B-IBI scores compared to other regional streams (EVS Golder 2005). Very low B-IBI scores of 10 to 22 (1999-2006) demonstrate potential cumulative biological implications of poor water quality, high velocity/erosive stormwater flows, habitat degradation, and urbanization. For example, Woodcock and Huryn (2007) found that streams with the highest concentrations of metals had the most extreme decreases in macroinvertebrate production. Other research has documented strong negative correlation between extent of urbanization and health of stream macroinvertebrate communities (Sponseller et al. 2001, Urban et al. 2006, Walsh et al. 2007).

However, while the B-IBI is a useful measure of water quality and overall biological function within a stream system, it may not be the most appropriate method to evaluate Mercer Island streams. The B-IBI was developed primarily for evaluation of 2nd and 3rd order streams. The drainage basins evaluated here are generally very small with flashy hydrologic regimes and are not considered 2nd or 3rd order streams. Localized basin improvements and source control measures may help raise the B-IBI scores slightly; however, due to the natural physical limitations of these water bodies, the benthic macroinvertebrate communities in these streams are not likely to reach the abundance and diversity of other larger systems in the region. Because of these reasons, benthic macroinvertebrate sampling was discontinued in 2009.

4.1.4 Dissolved Metals

In 2009 and 2010, copper and zinc concentrations were above WQS four times and two times, respectively (Table 9), with all exceedances in basins 10 and 32b. Lead and chromium values were below WQS during all sampling events at all sites.

Table 9. Hardness (mg/L CaCO3), dissolved metal (µg/L) concentrations and hardness corrected acute WQS. Highlighted bold values indicate concentrations greater than acute WQS. Values in italics indicate < RDL.

Site	Category	Date	Hardness	Cr	Cr Acute WQS[1]	Cu	Cu Acute WQS[1]	Pb	Pb Acute WQS[1]	Zn	Zn Acute WQS[1]
10	commercial	12/12/2008	NA	*0.76*	no data	4.77	no data	0.24	no data	40.10	no data
		3/14/2009	42.7	*0.82*	279.1	6.36	7.6	*0.19*	25.25	26.60	55.60
		3/28/2009	64.2	*0.62*	381.7	5.06	11.2	*0.13*	39.74	20.70	78.62
		10/26/2009	48.6	*0.77*	303.9	6.38	8.6	*0.24*	29.20	28.80	62.10
		11/5/2009	20.2	*0.52*	148.1	**4.68**	3.8	*0.30*	10.91	**35.40**	29.51
		1/4/2010	32.8	*0.72*	220.2	**77.90**	6.0	*0.30*	18.83	24.60	44.50
		3/11/2010	39.0	*0.56*	253.8	4.76	7.0	*0.16*	22.86	32.10	51.54
6	residential	12/12/2008	no data	*0.67*	no data	*1.90*	no data	0.15	no data	3.00	no data
		3/14/2009	45.0	*0.59*	285.3	2.41	8.0	*0.11*	26.81	5.33	58.17
		3/28/2009	58.3	*0.66*	352.7	2.09	10.2	<MDL	35.72	24.60	72.45
26		12/12/2008	NA	1.76	no data	2.41	no data	0.14	no data	2.00	no data
		3/14/2009	64.1	2.51	381.2	2.20	11.9	<MDL	39.67	3.97	78.52
		3/28/2009	78.4	2.18	449.6	2.36	13.5	<MDL	49.50	2.72	93.12
32b	residential	12/12/2008	no data	3.90	no data	5.81	no data	0.11	no data	10.90	no data
		3/14/2009	30.8	3.00	209.2	5.06	5.6	<MDL	17.55	**59.80**	42.19
		3/28/2009	47.5	2.82	298.3	5.44	8.4	<MDL	28.47	12.10	60.91
		10/26/2009	29.3	3.85	200.8	**6.32**	5.4	<MDL	16.59	18.10	40.45
		11/5/2009	26.0	5.89	182.1	**10.80**	4.8	*0.12*	14.51	15.80	36.55
		1/4/2010	27.2	3.97	188.9	4.78	5.0	<MDL	15.26	12.90	37.98
		3/11/2010	34.7	3.20	230.6	4.88	6.3	<MDL	20.06	14.00	46.68
42	residential	12/12/2008	no data	*0.97*	no data	2.44	no data	0.18	no data	2.00	no data
		3/14/2009	60.8	1.05	365.1	5.36	10.6	*0.14*	37.42	*1.70*	75.08
		3/28/2009	63.3	1.20	377.3	3.10	11.1	<MDL	39.12	*1.50*	77.68

[1]criteria corrected based on site-specific hardness concentration

As in previous years sampled, 2008–2010 dissolved metal concentrations were most frequently above WQS in the two commercial basins (copper and zinc in Basins 10 and Basin 32); concentrations did not exceed WQS in the residential basins (Table 10). A few common sources of dissolved metals include automobiles, pressure-treated wood, galvanized metals such as rain gutters and roofs, and construction/demolition activities (Hall and Anderson 1985, Pitt et al. 1995, King County 2009).

Table 10. Summary statistics for dissolved metal (µg/L) concentrations, including the number of samples exceeding WQS in all samples collected from 1999 through 2010.

Site	Category	Parameter	Number of Samples [1]	Number below detection	Min	Max	Mean	Number Exceeding State Acute Criteria
10	commercial	Hardness, Calc	37		16.8	179	53.43	
		Chromium, Dissolved, ICP-MS	24		0.52	7.23	1.07	
		Copper, Dissolved, ICP-MS	38		1.3	77.9	6.52	5
		Lead, Dissolved, ICP-MS	38	17	0.13	0.89	0.26	
		Zinc, Dissolved, ICP-MS	38		3.15	43.1	22.12	4
6	residential	Hardness, Calc	30		35.5	156	66.26	
		Chromium, Dissolved, ICP-MS	18	2	0.39	1.1	0.66	
		Copper, Dissolved, ICP-MS	32		0.62	4.15	2.62	
		Lead, Dissolved, ICP-MS	32	22	0.11	0.47	0.21	
		Zinc, Dissolved, ICP-MS	32		0.7	24.6	5.88	
26	residential	Hardness, Calc	26		45.9	280	96.98	
		Chromium, Dissolved, ICP-MS	19		0.79	2.51	1.42	
		Copper, Dissolved, ICP-MS	27		0.72	12	2.86	
		Lead, Dissolved, ICP-MS	27	23	0.139	1.03	0.22	
		Zinc, Dissolved, ICP-MS	27		0.54	5.64	2.05	
29	residential	Hardness, Calc	15		36.3	129	73.04	
		Chromium, Dissolved, ICP-MS	1		0.74	0.74	0.74	
		Copper, Dissolved, ICP-MS	15		0.64	6.53	3.74	
		Lead, Dissolved, ICP-MS	15	13	0.19	0.42	0.21	
		Zinc, Dissolved, ICP-MS	15		0.88	6.15	3.89	
32	residential	Hardness, Calc	29		18.4	119	44.13	
		Chromium, Dissolved, ICP-MS	22		1.1	12.1	3.85	
		Copper, Dissolved, ICP-MS	30		1.9	13.1	5.97	8
		Lead, Dissolved, ICP-MS	30	19	0.107	0.27	0.19	
		Zinc, Dissolved, ICP-MS	30		1.6	59.8	13.76	1
42	residential	Hardness, Calc	16		47	121	67.51	
		Chromium, Dissolved, ICP-MS	17		0.89	2.56	1.41	
		Copper, Dissolved, ICP-MS	17		2.33	7.66	3.34	
		Lead, Dissolved, ICP-MS	17	11	0.14	0.35	0.21	
		Zinc, Dissolved, ICP-MS	17		1.5	6.38	3.17	

1. Chromium not analyzed before 2002

Elevated water column metal concentrations can reduce primary production in streams (McKnight 1981, Kettle and DeNoyelles 1986,), as well as have both lethal and sub-lethal impacts on invertebrates and fishes (e.g., Santore et al. 2001, Hansen et al. 2002, Baldwin et al. 2003, Kiffney and Clements 2003, McPherson et al. 2003, Niyogi and Wood 2004, Linbo et al. 2006). In particular, dissolved copper (dCu) has been shown to impact the senses of juvenile salmonids (Hecht et al. 2007). As summarized in a recent report to Mercer Island (Appendix C), dCu and dissolved Zinc (dZn) have the potential to limit the productivity and growth potential of wild salmon populations at concentrations below state WQS. Benchmark dCu concentrations ranged from 0.18 – 2.1 µg/L for predator avoidance behavior and 0.59 – 2.1 µg/L for olfactory responses. The National Marine Fisheries Service (NMFS) is utilizing effect thresholds lower than state WQS in their ESA Section 7 consultations with federal, state, and local governments (Landino 2008). While the 6 basin study streams do not support spawning adult salmon

populations, and likely have limited geographic distribution of rearing juvenile salmonid populations, fish frequenting the areas in Lake Washington near the mouths of these drainages may be exposed to dCu and dZn levels that potentially cause adverse sensory effects.

4.1.5 Herbicides and Pesticides

Chlorinated herbicides were detected in four samples collected during the 2008 June storm event, and one sample collected during a baseflow event on June 6, 2010 (Table 11). Over the course of this project, only one herbicide or pesticide has been detected at concentrations above available guidelines (Table 11). Diazinon was detected in Basin 32 on November 8, 2001 at a concentration of 1.69 µg/L, which is higher than USEPA's aquatic life ambient water quality criteria of 0.3397 µg//L (USEPA 2005).

Historically, the highest concentrations of herbicides and pesticides in storm samples are usually detected in late spring, early summer, and late fall when product use is at its highest (Figure 7). In the limited number of samples collected to date, there have been no herbicides or pesticides detected in the months of July, August, and September.

Table 11. Chlorinated herbicide and organophosphate pesticide detections by basin, frequency of detection (FOD), concentration range, and appropriate criteria/guidelines (1999-2010).

Parameter	Site	1999	2000	2001	2002	2003	2004	2005	2006	2008	2009	2010	Multi Year/Site Range (ug/L)	Criteria/Guideline [1] (ug/L)
2,4,5-T	06			1									0.22 - 0.53	---
	32								1					
2,4-D	06	1		1	1		1		1	1			0.21 - 4.97	30
	10	1	2	1	1		1	3						
	26			1			1	1						
	29	1	2	1	1									
	32			1	1		2	3		1		1		
	42							1		1				
2,4-DB	32								1				<MDL - 0.34	---
Dicamba	29	1	1										0.10 - 0.23	14,000
MCPP	06	1							1				0.11 - 1.50	2573.5
	10	1	2	2	1			1						
	26			1				1						
	29	1	2	2	1									
	32			1	1		1	1						
MCPA	06			1									0.14 - 0.63	380
	10		1	1										
	29		1											
	32			1						1				
Chlorpyrifos	10		1										0.05 - 0.06	0.083
	29	1	1											
Diazinon [2]	06	1	1			1							0.04 - 1.69	0.3397
	10	1	2	2										
	29	1	1	2	1									
	32			2										
Malathion	10			1									<MDL - 0.05	2
Total number of samples analyzed each year:														
Storm (n=)		8	16	24	24	18	24	24	18	11	12			
Baseflow (n=)											19	20		

1. see Table 5 for water quality criteria/guideline references

2. discontinued in 2009 and 2010

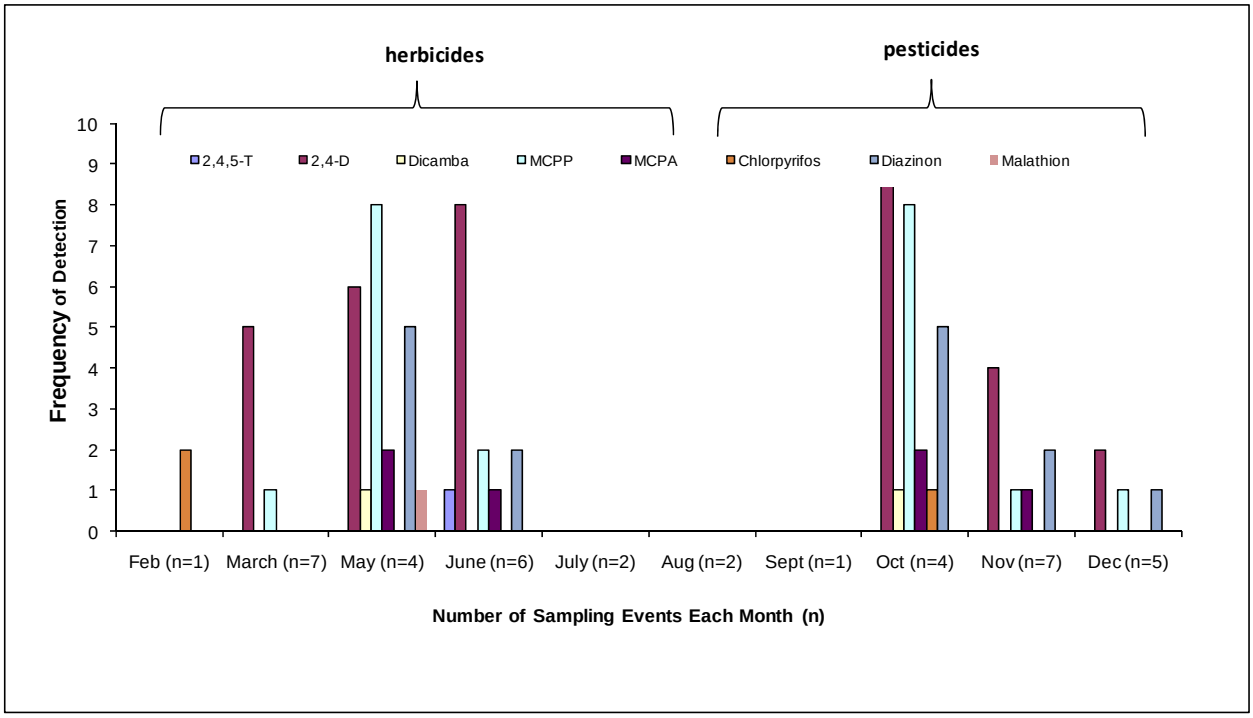


Figure 7. Frequency of herbicide and pesticide detection by month in samples collected from Mercer Island streams between 1999 and 2010.

Organophosphate pesticide analysis was discontinued in 2009 due to the declining use of these products (Diazinon was banned December 2004, chlorpyrifos was banned in December 2001), and low frequency of detection. Malathion, the most commonly used organophosphate insecticide in the United States has only been detected once in Mercer Island streams (Basin 10 in 2001). There were no organophosphate pesticides detected in 2008 or March 2009 (Table 10).

4.1.6 Sediments

Figure 8 provides a summary of the sediment chemistry data and a comparison to the sediment guidelines previously described above in Section 3.3.3. In 2008 sediment samples were collected in Basins 10, 26, 29, and 32. In 2009 and 2010, sediment samples were only collected in Basins 10 and 32 as these were the two basins where sediment guidelines had previously been exceeded. Sediment metals were below guidelines for copper, chromium, and lead in 2008, 2009, and 2010 in all basins sampled. In 2008-2010, zinc concentrations were above two to three of the guidelines in Basin 10, and above the TEL guideline in Basin 32 in 2008. The sediment data parallels the dissolved metal water quality data, with higher copper and zinc values in Basins 10 and 32.

Table 12 summarizes the number of NPO detections in the Mercer Island sediment samples throughout the course of this project. In the last three years of sampling, the high value of 1420 mg/Kg measured at Basin 32 in September 2009 is particularly noteworthy.

Table 12. NPO (mg/Kg dry weight) detected in sediment samples collected in Mercer Island sediment from 1999-2010.

year	6	10	26	29	32	42
1999						
2000						
2001						
2002						
2003	210	190			240	260
2004	310	230	270		120	280
2005	430	936	448		579	401
2006	344	899	371		592	746
2008		233				
2009					1420	
2010		360				

Sediment chemistry can provide insight into water quality issues that periodic stormwater sampling may miss, simply because sediment tends to move more slowly through a system than water. The field notes for this project documented that the sediment samples consisted mainly of sand. This was confirmed in a recent particle size distribution analysis for sediments in both Basin 10 and 32 (Appendix B). Sand is an indication of an erosional environment as opposed to areas where a lot of fines have built up, and it is difficult to track long-term trends for sediment metal contamination in erosional environments (Dean Wilson, King County WLRD, personal communication). Further, contaminants are generally associated with fines, so these results may underestimate the concentrations of sedimentary metals moving through the Mercer Island streams into Lake Washington.

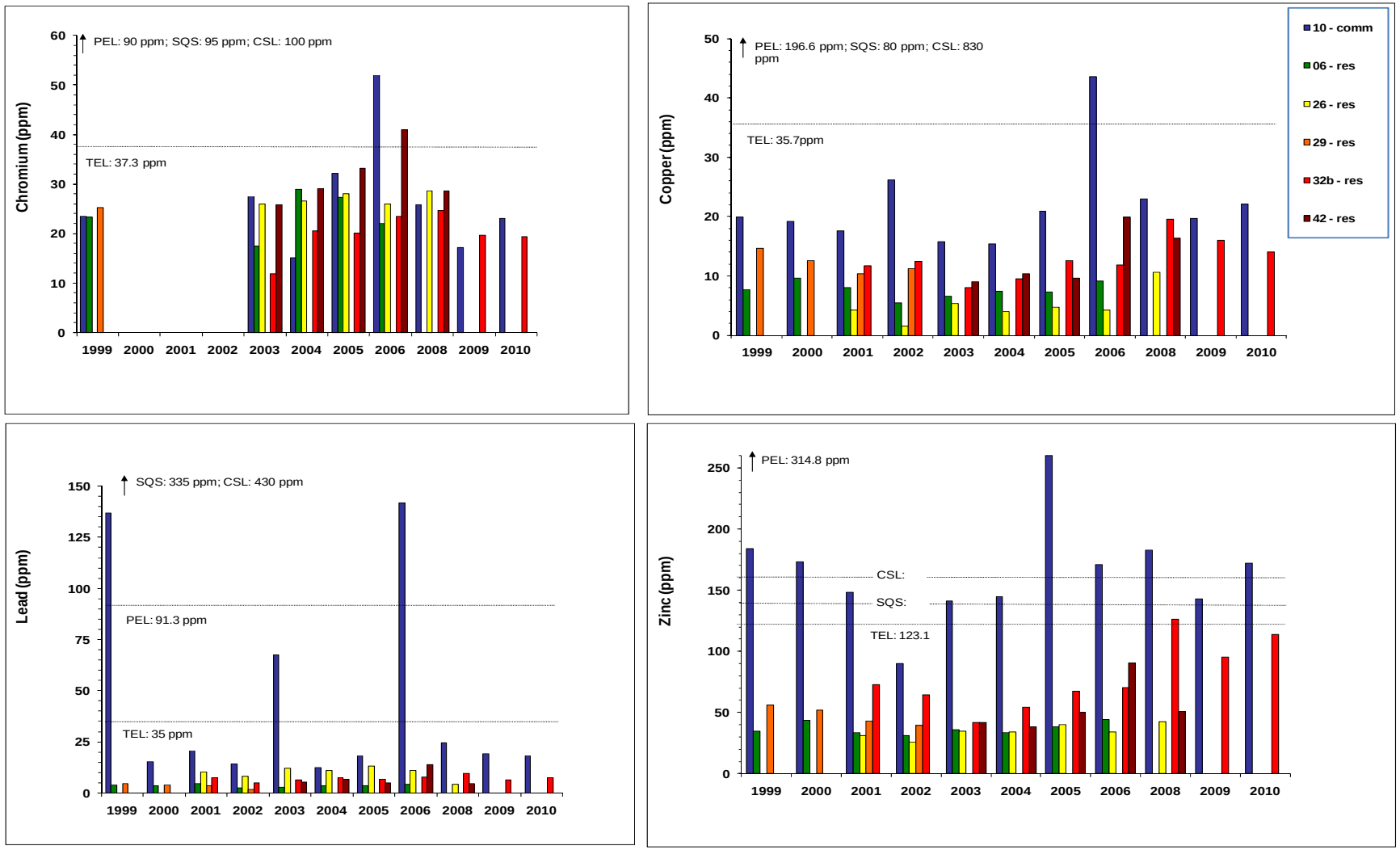


Figure 8. Sediment metal concentrations (chromium, copper, lead, and zinc) in ppm (dry weight) and Freshwater Sediment Quality Guidelines. Basins are designated as commercial (comm) or residential. Washington Floating Percentiles: SQS = Sediment Quality Standard, CSL = Cleanup Screening Value. Canadian Sediment Quality Standards: PEL= probable Effect Level. TEL = Threshold Effect Level..

4.2 Individual Basin Results, Discussion, and Recommendations

Over the past eleven years (1999-2010), water quality in Mercer Island streams has been measured in 36 storm events and in 13 baseflow events. Sediment chemistry has been evaluated annually, with the exception of 2007. Benthic macroinvertebrate community composition has been measured annually from 1999 to 2008 (with the exception of 2004 and 2007). Basin improvements have been implemented in different basins at different times over the course of this monitoring period. Though most basin improvements have been initiated upstream of the sampling locations, a few were downstream.

Some water and sediment quality parameters measured in the study basins varied predictably according to dominant land use classification. In general, residential areas with streams coursing through steep ravines that cause excessive scouring of the stream channel tended to have more problems associated with sedimentation (i.e., high conductivity, turbidity, TSS, and nutrients), and commercial centers tended to have more water quality problems associated with transportation and other contaminants associated with impervious surfaces (i.e., high metals and NPO). Discussion of this will be by basin.

Although this study was not designed to provide data for analyses of pre- and post-improvement water quality conditions, in some cases, there were sufficient data to conduct statistical analyses. This provides the opportunity to examine basin conditions over time and to use observed trends to make informed recommendations for future basin improvements. Understanding differences among drainages can help to better focus residential source control measures and/or the City's drainage improvement projects to more effectively improve water quality within each basin. The following basin-by-basin discussion focuses on parameters in each individual basin that were elevated compared to the other basins or regional streams, and/or those that were above WQS or appropriate guidelines.

4.2.1 Basin 6 – residential

Over the course of this monitoring period only a few parameters have exceeded WQS – fecal coliform bacteria and DO during baseflow monitoring. Improvements in Basin 6 were located upstream of the sampling location and were completed in 1998, prior to monitoring. Therefore, it is not possible to evaluate any water quality improvements that might be associated with these efforts. An additional 800 feet upstream of the monitoring site is scheduled for restoration/stabilization work in 2011.

This basin continues to have high TP, TSS, fecal coliform, and *E. coli* bacteria values during storm events, indicating erosion and sediment transport in stormwater runoff. The high TSS and turbidity indicate that peak flows during storms are strong enough to transport sediment out of the basin. Relative to the other residential basins, baseflow fecal coliform bacteria was also high in this basin. Increased erosion control planned for 2011 in Basin 6 may help lower the sediment, nutrient, and bacteria levels in this stream.

Recommendations:

- Continue quarterly monitoring for conventional parameters at this site to determine if erosion improvements taking place in 2011 result in downstream improvements.
- If possible, future sampling should include a station downstream of the sediment pond to determine whether the sediment and nutrients detected upstream of the pond are being transported to Lake Washington.
- Investigate potential sources of peak flows during storms to evaluate further reducing the erosive force of stormwater flows prior to being discharged into the stream.

4.2.2 Basin 10 – commercial

Improvements in Basin 10 were implemented downstream of the sampling location, and included culvert, flume, and sewer replacement in 2003. Therefore, changes in water quality due to these improvements cannot be measured. Instead, analyses focused on detecting inter-annual trends in contaminants associated with commercial land uses (i.e., dissolved metals, NPO, bacteria) over the course of the sampling history in Basin 10.

Over the course of this study, Basin 10 has had very high fecal coliform bacteria levels in waters collected during both storm and baseflow conditions. In addition, copper and zinc concentrations in the basin continue to exceed the acute WQS (Table 10). Metals were also commonly detected in the sediment samples in Basin 10. Sediment zinc concentrations were frequently above sediment guidelines; lead, copper, and chromium have exceeded sediment guidelines several times throughout the monitoring period (Figure 7). As discussed in Section 4.1.4, elevated metal concentrations in sediment and water are frequently associated with transportation (cars, parking lots, roads) and galvanized metal rain gutters and roofs.

Because Basin 10 is dominated by commercial land use, the detection of metals in the water and sediment samples is not unexpected. However, metals can pose serious risks for invertebrate and fish health (see Section 4.1.4), so source control in areas that may produce substantial amounts of contaminated stormwater runoff from impervious areas should be a consideration. Previous basin improvements conducted in Basin 10 were designed to channel flows rather than to reduce the input of degraded stormwater runoff to the stream. Therefore, relocating the sampling location downstream of the 2003 improvement projects would not allow for detection of changes in water quality.

A high fraction of the total phosphorus measured in Basin 10 was in the form of ortho-phosphorus. These OP concentrations were high relative to levels detected in regional streams in the area (King County 2008). As discussed in section 4.1.2, the higher fractions of OP and relatively low TSS suggest a dominant presence of dissolved phosphorus, possibly associated with fertilizers or animal waste.

Recommendations:

- Dissolved copper and zinc concentrations repeatedly exceeded acute WQS – tailor future basin improvements to control non-point source runoff and treat stormwater before it drains to Lake Washington.
- Sediment metal concentrations continue to be high – investigate potential sources.

- High OP when compared to regional streams – investigate commercial landscaping practices.
- Investigate potential sources of high fecal coliform bacteria in storm samples using microbial source identification (bacteriodes and/or bifidofacter) to reduce public health risk.

4.2.3 Basin 26 – residential

Improvements in Basin 26 consisted of slope stabilization and channel widening in 2005 and 1100 feet of stabilization further upstream that was completed in 2009. This basin is subject to erosion problems, which is reflected in the high turbidity and TSS. Storm samples collected post 2009 restoration on January 4, 2010 and March 11, 2010, had variable TSS concentrations, at 147 and 12 mg/L, respectively. Collection of additional storm samples is necessary to determine the effectiveness of the more recent improvements.

Basin 26 has consistently experienced high bacteria levels, high conductivity, high TSS, as well as high TN, and TP concentrations in storm samples. High TSS indicates peak flows are causing soils to erode. Bacteria levels continue to be high in storm samples (Figure 5) indicating that restoration efforts have not been effective in reducing runoff bacterial sources to date. There is also a linkage between high TSS and high TP because phosphorus binds readily to sediments. Elevated phosphorus levels may lead to nutrient enrichment and increased biological activity (e.g. algal blooms), potentially contributing to oxygen depletion and eutrophication. Phosphorus is the limiting nutrient in Lake Washington and therefore the nutrient of primary concern.

Recommendations:

- Monitor for parameters typically associated with erosive processes such as conductivity, TSS, and nutrients.
- Investigate potential sources of high fecal coliform bacteria in storm samples using microbial source identification (bacteriodes and/or bifidofacter) to reduce public health risk.
- Monitor flows to investigate major source(s) to peak flows during storm events.

4.2.4 Basin 29 – residential

Improvements in Basin 29 completed in 2008 included 550 feet of restoration/stabilization. Samples have not been collected from this basin since 2002. Therefore, discussion of water and sediment quality improvements in this basin will be reserved for future analyses if sampling is resumed. Prior to 2002 chlorinated herbicides and organophosphates had been frequently detected. Refer to the Year 2002 Annual Report for the City of Mercer Island for detailed information about this basin (King County 2003).

Recommendation:

- Evaluating this site for future monitoring to determine post restoration water quality improvements.

4.2.5 Basin 32 – residential/light commercial

Sampling began in Basin 32 in 2001, following the first improvement (stormwater detention pond expansion) which was implemented in 2000. In 2002, an additional 200 foot stretch of the watercourse was stabilized in 2002. Bacteria levels, both fecal coliforms and *E. coli* were high in storm samples, though fecal coliform values in samples collected in the most recent storms in 2009 and 2010 were less than 1000 CFU, which is an improvement over previous years.

Basin 32 was one of the two basins where dissolved copper and zinc concentrations were above acute WQS. In addition, the sediment sample collected in 2008 had zinc concentrations that exceeded sediment guidelines. Though Basin 32 is mainly residential, it does have a small commercial area, which, along with the roads running through the area, may be contributing to the elevated copper levels. Source control (e.g., stormwater management, street cleaning, etc.) and resident education about the sources and implications of copper may help reduce dissolved metal concentrations in this basin. In addition to sampling below the commercial area, the City may consider sampling water quality above and below the detention pond to determine whether pond maintenance needs to be improved.

Chlorinated herbicides (2,4-D and MCPA) were detected in Basin 32 in 2008 and 2010, though levels were well below WQS.

Recommendations:

- Dissolved copper (eight samples) and dissolved zinc (one sample) exceed acute WQS. Source identification should be a priority to identify the origin of the dissolved metals exceeding WQS. Stormwater management strategies can then be directed toward the land uses that are contributing most significantly to dissolved metal input.
- Sample above and below detention pond to determine stormwater treatment effectiveness

4.2.6 Basin 42 – residential

Sampling in Basin 42 was initiated in 2003, and improvements downstream of the sampling location were implemented in the same year. Water quality sampling takes place upstream of the stormwater treatment facility and sediment samples are collected in the detention pond. Therefore, it isn't possible to evaluate the effectiveness of this facility.

Basin 42 has high TSS, conductivity, and bacteria levels in storm samples. The chlorinated herbicide 2,4-D was detected in 2005 and 2008 at levels below criteria. In addition, the basin has high nutrient levels (both TP and TN). High TSS and total nutrients indicate that peak flows are causing erosion and sediment transport. Like Basin 10, the fraction of OP to TP is higher than in Basins 6 and 32. Elevated OP input could be an indicator of fertilizer use or animal waste in the basin. The fertilizer input could be attributed to residential use or landscape care in Mercer Island parks. Elevated nutrient levels can cause algal blooms in Lake Washington, the receiving water body, so preventing the phosphorus load to Mercer Island streams and ultimately the lake should be a goal of future restoration and/or education plans.

Recommendations:

- Implement sampling downstream of detention pond (or sample from the sediment pond outlet) to determine stormwater treatment effectiveness.

- Investigate potential sources of high fecal coliform bacteria in storm samples using microbial source identification (bacteriodes and/or bifidofacter) to reduce public health risk.
- High OP when compared to regional streams – investigate potential sources such as commercial landscaping practices.
- Conduct flow monitoring to investigate the source(s) of stormwater within the basin to evaluate reducing the erosive force of the storm flows.

5.0. CONCLUSIONS/RECOMMENDATIONS

Overall, water quality issues in the Mercer Island drainage basins were generally correlated with dominant land use. In the residential subbasins (especially Basin 26), water quality problems were dominated by erosion caused by high stormwater flows and related issues (turbidity, phosphorus, etc.). In the commercial subbasins, water quality problems were characterized by contaminants (metals and detectable levels of high molecular weight hydrocarbons) associated with transportation and impervious surfaces. Bacteria levels in all basins were high during storm events posing potential health risks, and high in Basins 6 and 10 during baseflow conditions.

Basin conditions regarding high turbidity, TSS, and stream channel erosion are all related to stream flow volumes and velocities. To better understand these problems, their scope, and assist in identifying potential fixes, continuous stream gauging should be implemented in this monitoring program. Gauging information could be used to design and implement further flow reduction strategies. This data could also be used to assess if previous channel improvements designed to reduce velocities and erosion are providing their intended benefit and to help troubleshoot those that are not.

Trend analysis or changes over time were not evaluated during this assessment because data collection methods for this monitoring program are not designed for this type of analysis. Before and after basin improvement analysis was also not possible with the current monitoring design. If trend analysis and before and after basin improvement monitoring are determined to be important, future monitoring should be designed with these goals in mind.

Basin improvements should be tailored to address the water quality and quantity issues described in this report. In the stream ravines where peak stormwater flows are damaging the stream channel, determining the source of these peak flows and implementing further flow reduction/attenuating strategies should also reduce erosion and sediment/nutrient inputs. In the commercial centers, investigation into contaminant sources and reduction in contaminant input should be the focus of future subbasin improvements. Stormwater detention and other low impact development techniques (e.g., vegetated swales, porous pavement) can slow velocities during storms and may help filter contaminants and slow the transfer of degraded stormwater runoff to receiving waterbodies. Utilizing several of King County's microbial source tracking techniques through more intensive bacterial source investigations may help to identify sources.

5.1.1 Priority Action Items

The goal of the next phase of Mercer Island's Water Quality Monitoring Program is to focus investigating water quality and quantity issues within Basins 10 and 32b prior to entering Lake Washington. A detailed breakdown of the priority action items and associated costs for 2011 2012 is outlined below.

ACTION PLAN FOR MERCER ISLAND

ESTIMATED ANNUAL COSTS		
2011	**2012**	**TOTAL**
$39,948	**$39,999**	**$79,947**

		Estimated hours or units	Cost	Year
Administration costs				
2011	• Project Management (100/billable rate)	50	$5,000	**2011**
	• Pre-Technical Services Agreement	50	$5,000	**2011**
	• Year end data analysis	109	$10,900	**2011**
	Sub 2011	209	**$20,900**	**2011**
2012	• Project Management	50	$5,000	**2012**
	• Year end data analysis and report writing	221	$22,075	**2012**
	Sub 2012	271	**$27,075**	**2012**
Basin 10				
Concern(s)	• High copper and zinc in stormwater and sediment • High fraction of ortho-P indicating fertilizer. • High fecal coliform in stormwater • Flashy, erosive flows			
Question(s)	• What segment(s) of the drainage basin are the copper and zinc coming from? • What are the potential sources of ortho-P in the basin? • What is the source of the high fecal coliform bacteria and is there a potential human health risk?			

		Estimated hours or units	Cost	Year
	• What is/are the primary sources of the peak flows during storm events?			
Action Item	**1** Investigate flow sources and possible options for reducing upstream stormwater sources of copper, zinc, and ortho-phosphorus field investigations, GIS mapping, and consultations (assumes City works with land owners)			
	• Lab staff @ 82/hr	10	$820	**2011**
	• KSC staff @ 100/hr	24	$2,400	**2011**
	Sub for Action Item 1		$3,220	
	2 Investigate upstream stormwater for sources of copper, zinc and ortho-P, 4 storm events per year, 7 sites total			
	• Conventionals, fecs, ortho-P, TP, TN, TSS, ICPMS metals (dissolved), hardness ~ $2582/event- 2011	2X	$5,164	**2011**
	• Conventionals, fecs, ortho-P, TP, TN, TSS, ICPMS metals (dissolved), hardness ~ $2677/event- 2012	2X	$5,354	**2012**
	Sub for Action Item 2		$10,518	
BASIN 10 by year	**Sub - 2011**		**$8,384**	
	Sub - 2012		**$5,354**	
	TOTAL BASIN 10		**$13,738**	
Basin 32 b				
Concern(s)	• Copper and zinc in stormwater and sediments • Flashy, erosive flows			
Question(s)	• What segment(s) of the drainage basin are copper and zinc coming from? • Are bio-swales/sediment ponds in Basin 32 b effective at reducing loads to Lake Washington?			

		Estimated hours or units	Cost	Year
Action Items	• What is/are the primary sources of the peak flows during storm events?			
	1 Investigate flow sources and possible options for reducing peak flows field investigations, GIS mapping, and consultations (assumes City works with land owners)			
	• Lab staff @ 82/hr	10	$820	**2011**
	• KSC staff @ 100/hr	24	$2,400	**2011**
	• Install 4 gauges upstream of the water quality site to quantify flow sources.			
	• @ $2,000 per gauge and one year of recording. Six months	4	$4,000	**2011**
	• @ $2,000 per gauge and one year of recording. Six months	4	$4,000	**2012**
	Sub for Action Item 1		$7,220	
	2 Investigate upstream stormwater for sources of copper and zinc, 4 storm events per year, 4 sites total			
	• Conventionals, fecs, ortho-P, TP, TN, TSS, ICPMS metals (dissolved), hardness ~ $1722/event 2011	2X	$3,444	**2011**
	• Conventionals, fecs, ortho-P, TP, TN, TSS, ICPMS metals (dissolved), hardness ~ $1785/event 2012	2X	$3,570	**2012**
	Sub for Action Item 2		$7,014	
BASIN 32 b by year	**Sub - 2011**		**$10,664**	**2011**
	Sub - 2012		**$7,570**	**2011**
	TOTAL BASIN 32 b		**$18,234**	
TOTAL COST 2011-2012			**$79,947**	

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Appendix A

Water Quality Data Lab Reports for Five Mercer Island Basins

Provided by:

King County Water and Land Resources Division Environmental Laboratory

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

July 7, 2008

TO: Sarah McCarthy
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195CY
Mercer Island Stormwater Monitoring,
Samples L44379-1 to 7, 9

Attached is the comprehensive report for the water samples collected and delivered to the laboratory on June 3, 2008. The samples were analyzed in the Organics, Metals, Microbiology and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:
There were no anomalies associated with the preparation and the analysis of these samples.

Metals:
There were no anomalies associated with the preparation and the analysis of these samples. The samples were not filtered in the field nor at the laboratory. The sample results are reported as total metals.

Microbiology:
There were no anomalies associated with the preparation and the analysis of these samples.

Organics:

Oil, Non-Polar Analysis:
There were no anomalies associated with the analysis of these samples.

Herbicide Analyses:
Herbicide analysis was subcontracted to STL Seattle (Severn Trent Laboratory). There were no anomalies associated with the analysis of these samples.

Organophosphorus Pesticides (short list) Analyses:
There were no anomalies associated with the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL06					MERCERISL10					MERCERISL26					MERCERISL32				
Descrip:	R/D FACILITY SOUTH					SE 22ND ST, NEAR M					FOREST AVE. AND 84					CREEK NEAR HOLLYHI				
Sampled:	06/03/08 12:13:22 AM					06/03/08 12:14:12 AM					06/03/08 12:10:45 AM					06/03/08 12:11:30 AM				
Lab ID:	L44379-1					L44379-2					L44379-3					L44379-4				
Matrix:	STORM WTR					STORM WTR					STORM WTR					STORM WTR				
% Solids:																				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			- Wet Weight Basis					- Wet Weight Basis					- Wet Weight Basis					- Wet Weight Basis		
COMBINED LABS																				
M=CV SM2130-B (311V4)																				
Turbidity	29		0.5	2	NTU	8.34		0.5	2	NTU	11.7		0.5	2	NTU	7.01		0.5	2	NTU
M=CV SM2510-B (302V4)																				
Conductivity																				
M=CV SM2540-D (309V2)																				
Total Suspended Solids	240		2	4	mg/L	12.2		1	2	mg/L	46.2		1	2	mg/L	19.8		0.9	1.8	mg/L
M=CV SM4500-H-B (303V5)																				
pH																				
M=CV SM4500-N-C (331V3)C																				
Total Nitrogen	0.96		0.05	0.1	mg/L	0.863		0.05	0.1	mg/L	1.17		0.05	0.1	mg/L	0.935		0.05	0.1	mg/L
M=CV SM4500-P-B,F(331V3)C																				
Total Phosphorus	0.241		0.005	0.01	mg/L	0.108		0.005	0.01	mg/L	0.131		0.005	0.01	mg/L	0.123		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)																				
Orthophosphate Phosphorus	0.0332		0.002	0.005	mg/L	0.0451		0.002	0.005	mg/L	0.0538		0.002	0.005	mg/L	0.0497		0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)																				
Conductivity, Field	72.2		0.5	10	umhos/cm	91.2		0.5	10	umhos/cm	164		0.5	10	umhos/cm	60.3		0.5	10	umhos/cm
Dissolved Oxygen Saturation, Field	94.5				%	89.4				%	93.4				%	94.6				%
Dissolved Oxygen, Field	9.8		0.5	1	mg/L	9		0.5	1	mg/L	10		0.5	1	mg/L	10		0.5	1	mg/L
pH, Field	7.34				pH	7.15				pH	7.47				pH	7.11				pH
Sample Temperature, Field	13.45				deg C	14.94				deg C	11.91				deg C	12.86				deg C
M=ES NONE																				
Discharge Rate of Stream	1.3		0.05	0.1	cfs	0.8		0.05	0.1	cfs	1.2		0.05	0.1	cfs	1		0.05	0.1	cfs
Field Personnel	JP				none	JP				none	JP				none	JP				none
Sample Function																				
Sample Information																				
M=MC SM 9213D 20TH (SOP 522V0)																				
Escherichia coli	4500				CFU/100ml	4400				CFU/100ml	3400				CFU/100ml	2400				CFU/100ml
M=MC SM 9222D 20TH (SOP 506V1)																				
Fecal Coliform	3400				CFU/100ml	3300				CFU/100ml	1500				CFU/100ml	2800				CFU/100ml
M=MT ICPMS EPA 200.8 (623V0,624V0)																				
Chromium, Total, ICP-MS	13.7		0.4	2	ug/L	1.5	<RDL	0.4	2	ug/L	7.11		0.4	2	ug/L	12.8		0.4	2	ug/L
Copper, Total, ICP-MS	14.1		0.4	2	ug/L	8.81		0.4	2	ug/L	5.8		0.4	2	ug/L	12.5		0.4	2	ug/L
Lead, Total, ICP-MS	6.18		0.2	1	ug/L	1.81		0.2	1	ug/L	1.55		0.2	1	ug/L	0.97	<RDL	0.2	1	ug/L
Zinc, Total, ICP-MS	44.4		0.5	2.5	ug/L	32.9		0.5	2.5	ug/L	13.7		0.5	2.5	ug/L	55.8		0.5	2.5	ug/L
M=OR EPA 3520C/8270C (7-3-04-001)																				
Chlorpyrifos		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L
Diazinon		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L
Disulfoton		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L
Malathion		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L
Parathion-Ethyl		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L
Parathion-Methyl		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L
Phorate		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L
M=OR EPA1664A(703-19-D)																				
SGT-Hem (oil, nonpolar)		<MDL	2	5	mg/L	3.21	<RDL	2	5	mg/L		<MDL	2	5	mg/L		<MDL	2	5	mg/L
M=OR SW-846 8151A GCMS MODIFIED																				
2,4,5-T		<MDL	0.012	0.2	ug/L		<MDL	0.012	0.2	ug/L		<MDL	0.012	0.2	ug/L		<MDL	0.012	0.2	ug/L
2,4,5-TP (Silvex)		<MDL	0.017	0.2	ug/L		<MDL	0.017	0.2	ug/L		<MDL	0.017	0.2	ug/L		<MDL	0.017	0.2	ug/L

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL06					Locator:	MERCERISL10					Locator:	MERCERISL26					Locator:	MERCERISL32				
Descrip:	R/D FACILITY SOUTH					Descrip:	SE 22ND ST, NEAR M					Descrip:	FOREST AVE. AND 84					Descrip:	CREEK NEAR HOLLYHI				
Sampled:	06/03/08 12:13:22 AM					Sampled:	06/03/08 12:14:12 AM					Sampled:	06/03/08 12:10:45 AM					Sampled:	06/03/08 12:11:30 AM				
Lab ID:	L44379-1					Lab ID:	L44379-2					Lab ID:	L44379-3					Lab ID:	L44379-4				
Matrix:	STORM WTR					Matrix:	STORM WTR					Matrix:	STORM WTR					Matrix:	STORM WTR				
% Solids:						% Solids:						% Solids:						% Solids:					
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			- Wet Weight Basis					- Wet Weight Basis					- Wet Weight Basis					- Wet Weight Basis		
COMBINED LABS																				
2,4-D	0.73		0.0092	0.2	ug/L		<MDL	0.0092	0.2	ug/L		<MDL	0.0092	0.2	ug/L	1		0.0092	0.2	ug/L
2,4-DB		<MDL	0.017	0.2	ug/L		<MDL	0.017	0.2	ug/L		<MDL	0.017	0.2	ug/L		<MDL	0.017	0.2	ug/L
Dalapon		<MDL	0.034	0.4	ug/L		<MDL	0.034	0.4	ug/L		<MDL	0.034	0.4	ug/L		<MDL	0.034	0.4	ug/L
Dicamba		<MDL	0.017	0.2	ug/L		<MDL	0.017	0.2	ug/L		<MDL	0.017	0.2	ug/L		<MDL	0.017	0.2	ug/L
Dichloroprop		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L
Dinoseb		<MDL	0.044	0.2	ug/L		<MDL	0.044	0.2	ug/L		<MDL	0.044	0.2	ug/L		<MDL	0.044	0.2	ug/L
MCPA		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L	0.48		0.015	0.2	ug/L
MCPP		<MDL	0.011	0.2	ug/L		<MDL	0.011	0.2	ug/L		<MDL	0.011	0.2	ug/L		<MDL	0.011	0.2	ug/L
M=OR WDOE NWTPH-HCID (7-3-05-001)																				
Diesel Range (>C12 Thru C24)		<MDL	0.6	0.6	mg/L		<MDL	0.59	0.59	mg/L		<MDL	0.59	0.59	mg/L		<MDL	0.59	0.59	mg/L
Gasoline Range (C7 Thru C12)		<MDL	0.24	0.24	mg/L		<MDL	0.24	0.24	mg/L		<MDL	0.24	0.24	mg/L		<MDL	0.24	0.24	mg/L
Lube Oil Range (>C24)		<MDL	0.6	0.6	mg/L		<MDL	0.59	0.59	mg/L		<MDL	0.59	0.59	mg/L		<MDL	0.59	0.59	mg/L

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL42					Locator:	MERCERISL42 FREP					Locator:	ATMOSBLANK					Locator:	FFBLANK				
Descrip:	E. MERCER WAY					Descrip:	E. MERCER WAY					Descrip:	ATMOSPHERE BLANK					Descrip:	FIELD FILTER BLANK				
Sampled:	06/03/08 12:12:05 AM					Sampled:	06/03/08 12:12:25 AM					Sampled:	06/03/08 12:00:00 AM					Sampled:	06/03/08 12:10:20 AM				
Lab ID:	L44379-5					Lab ID:	L44379-6					Lab ID:	L44379-7					Lab ID:	L44379-9				
Matrix:	STORM WTR					Matrix:	STORM WTR					Matrix:	BLANK WTR					Matrix:	BLANK WTR				
% Solids:						% Solids:						% Solids:						% Solids:					
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			- Wet Weight Basis					- Wet Weight Basis					- Wet Weight Basis					- Wet Weight Basis		
COMBINED LABS																				
M=CV SM2130-B (311V4)																				
Turbidity	24.4		0.5	2	NTU	24.4		0.5	2	NTU										
M=CV SM2510-B (302V4)																				
Conductivity						163		1	5	umhos/cm										
M=CV SM2540-D (309V2)																				
Total Suspended Solids	54.4		2	4	mg/L	44.8		2	4	mg/L										
M=CV SM4500-H-B (303V5)																				
pH						7.28	H			pH										
M=CV SM4500-N-C (331V3)C																				
Total Nitrogen	1.36		0.05	0.1	mg/L	1.3		0.05	0.1	mg/L										
M=CV SM4500-P-B,F(331V3)C																				
Total Phosphorus	0.219		0.005	0.01	mg/L	0.204		0.005	0.01	mg/L										
M=CV SM4500-P-F,(330V4)																				
Orthophosphate Phosphorus	0.0829		0.002	0.005	mg/L	0.0829		0.002	0.005	mg/L							<MDL	0.002	0.005	mg/L
M=ES HYDROLAB (SOP 205V4)																				
Conductivity, Field	152		0.5	10	umhos/cm	158		0.5	10	umhos/cm										
Dissolved Oxygen Saturation, Field	93.1				%	93				%										
Dissolved Oxygen, Field	10.1		0.5	1	mg/L	10		0.5	1	mg/L										
pH, Field	7.39				pH	7.4				pH										
Sample Temperature, Field	11.53				deg C	11.52				deg C										
M=ES NONE																				
Discharge Rate of Stream	0.4		0.05	0.1	cfs	0.4		0.05	0.1	cfs										
Field Personnel	JP				none	JP				none										
Sample Function						FREP@L44379-5				none										
Sample Information																FFBLANK				none
M=MC SM 9213D 20TH (SOP 522V0)																				
Escherichia coli	3500				CFU/100ml	2700				CFU/100ml										
M=MC SM 9222D 20TH (SOP 506V1)																				
Fecal Coliform	2700				CFU/100ml	2200				CFU/100ml										
M=MT ICPMS EPA 200.8 (623V0,624V0)																				
Chromium, Total, ICP-MS	5.7		0.4	2	ug/L	5.02		0.4	2	ug/L		<MDL	0.4	2	ug/L					
Copper, Total, ICP-MS	6.53		0.4	2	ug/L	5.88		0.4	2	ug/L		<MDL	0.4	2	ug/L					
Lead, Total, ICP-MS	2.3		0.2	1	ug/L	2.03		0.2	1	ug/L		<MDL	0.2	1	ug/L					
Zinc, Total, ICP-MS	10.9		0.5	2.5	ug/L	9.7		0.5	2.5	ug/L		<MDL	0.5	2.5	ug/L					
M=OR EPA 3520C/8270C (7-3-04-001)																				
Chlorpyrifos		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L										
Diazinon		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L										
Disulfoton		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L										
Malathion		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L										
Parathion-Ethyl		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L										
Parathion-Methyl		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L										
Phorate		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L										
M=OR EPA1664A(703-19-D)																				
SGT-Hem (oil, nonpolar)		<MDL	2	5	mg/L		<MDL	2	5	mg/L										
M=OR SW-846 8151A GCMS MODIFIED																				
2,4,5-T		<MDL	0.012	0.2	ug/L		<MDL	0.012	0.2	ug/L										
2,4,5-TP (Silvex)		<MDL	0.017	0.2	ug/L		<MDL	0.017	0.2	ug/L										

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL42					MERCERISL42 FREP					ATMOSBLANK					FFBLANK				
Descrip:	E. MERCER WAY					E. MERCER WAY					ATMOSPHERE BLANK					FIELD FILTER BLANK				
Sampled:	06/03/08 12:12:05 AM					06/03/08 12:12:25 AM					06/03/08 12:00:00 AM					06/03/08 12:10:20 AM				
Lab ID:	L44379-5					L44379-6					L44379-7					L44379-9				
Matrix:	STORM WTR					STORM WTR					BLANK WTR					BLANK WTR				
% Solids:																				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			- Wet Weight Basis					- Wet Weight Basis					- Wet Weight Basis					- Wet Weight Basis		
COMBINED LABS																				
2,4-D	0.66		0.0092	0.2	ug/L	1.4		0.0092	0.2	ug/L										
2,4-DB		<MDL	0.017	0.2	ug/L		<MDL	0.017	0.2	ug/L										
Dalapon		<MDL	0.034	0.4	ug/L		<MDL	0.034	0.4	ug/L										
Dicamba		<MDL	0.017	0.2	ug/L		<MDL	0.017	0.2	ug/L										
Dichloroprop		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L										
Dinoseb		<MDL	0.044	0.2	ug/L		<MDL	0.044	0.2	ug/L										
MCPA		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L										
MCPP		<MDL	0.011	0.2	ug/L	0.99		0.011	0.2	ug/L										
M=OR WDOE NWTPH-HCID (7-3-05-001)																				
Diesel Range (>C12 Thru C24)		<MDL	0.59	0.59	mg/L		<MDL	0.59	0.59	mg/L										
Gasoline Range (C7 Thru C12)		<MDL	0.24	0.24	mg/L		<MDL	0.24	0.24	mg/L										
Lube Oil Range (>C24)		<MDL	0.59	0.59	mg/L		<MDL	0.59	0.59	mg/L										

PROJECT: 421195CY

King County Environmental Lab Matrix Report

COMBINED LABS-Liquid

Locator	Sample Depth	Lab ID	Conductivity	Orthophosphate Phosphorus	Total Nitrogen	Total Phosphorus	Total Suspended Solids	Turbidity	pH	Escherichia coli	Fecal Coliform	Chromium, Total, ICP-MS	Copper, Total, ICP-MS	Lead, Total, ICP-MS	Zinc, Total, ICP-MS	2,4-D	MCPA	MCPP	SGT-Hem (oil, nonpolar)	Conductivity, Field	Discharge Rate of Stream	Dissolved Oxygen Saturation, Field	Dissolved Oxygen, Field
			umhos/cm	mg/L	mg/L	mg/L	mg/L	NTU	pH	CFU/100ml	CFU/100ml	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	umhos/cm	cfs	%	mg/L
MERCERISL06		L44379-1		0.0332	0.96	0.241	240	29		4500	3400	13.7	14.1	6.18	44.4	0.73				72.2	1.3	94.5	9.8
MERCERISL10		L44379-2		0.0451	0.863	0.108	12.2	8.34		4400	3300	1.5	8.81	1.81	32.9				3.21	91.2	0.8	89.4	9
MERCERISL26		L44379-3		0.0538	1.17	0.131	46.2	11.7		3400	1500	7.11	5.8	1.55	13.7					164	1.2	93.4	10
MERCERISL32		L44379-4		0.0497	0.935	0.123	19.8	7.01		2400	2800	12.8	12.5	0.97	55.8	1	0.48			60.3	1	94.6	10
MERCERISL42		L44379-5		0.0829	1.36	0.219	54.4	24.4		3500	2700	5.7	6.53	2.3	10.9	0.66				152	0.4	93.1	10.1
MERCERISL42 FREP		L44379-6	163	0.0829	1.3	0.204	44.8	24.4	7.28	2700	2200	5.02	5.88	2.03	9.7	1.4		0.99		158	0.4	93	10

PROJECT: 421195CY

King County Environmental Lab Matrix Report

COMBINED LABS-Liquid

Locator	Sample Depth	Lab ID	Sample Temperature, Field deg C	pH, Field pH
MERCERISL06		L44379-1	13.45	7.34
MERCERISL10		L44379-2	14.94	7.15
MERCERISL26		L44379-3	11.91	7.47
MERCERISL32		L44379-4	12.86	7.11
MERCERISL42		L44379-5	11.53	7.39
MERCERISL42 FREP		L44379-6	11.52	7.4

Login Number: P44379

WLRD-MERCER ISLAND WQ STORM MONITORING

Project Number: 421195CY

Personnel: JP

Sample No. (Type)	P44379-1 (5)	P44379-2 (6)	P44379-3 (1)
Locator	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	
Locator Desc.	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time	3-JUN-08/1322	/1412	/1045
End Date/Time			
Time Span			
Sample Depth			
Comments	Need DOT Key	North Island Herb	84th Ave-Weyburn-West Island OP PEST
COND, FIELD	72.2	91.2	164.0
DO SAT, FIELD	94.5	89.4	93.4
DO, FIELD	9.78	8.96	10.01
PERSONNEL	JP	→	→
PH, FIELD	7.34	7.15	7.47
SAMP TEMP	13.45	14.94	11.91
STRM FLOW	1.3 CFS	0.8 CFS	1.2 CFS SWOFFR
TURB, FIELD	DELETE	→	→
Dept., Matrix, Prod.	TURB-LAB		
	3 STORM WTR ORTHOP	3 STORM WTR ORTHOP	3 STORM WTR ORTHOP
	3 STORM WTR TOTN	3 STORM WTR TOTN	3 STORM WTR TOTN
	3 STORM WTR TOTP	3 STORM WTR TOTP	3 STORM WTR TOTP
	3 STORM WTR TSS	3 STORM WTR TSS	3 STORM WTR TSS
	5 STORM WTR EC-MF	5 STORM WTR EC-MF	5 STORM WTR EC-MF
	5 STORM WTR FC-MF	5 STORM WTR FC-MF	5 STORM WTR FC-MF
	6 STORM WTR CR-ICPMS, DISS	6 STORM WTR CR-ICPMS, DISS	6 STORM WTR CR-ICPMS, DISS
	6 STORM WTR CU-ICPMS, DISS	6 STORM WTR CU-ICPMS, DISS	6 STORM WTR CU-ICPMS, DISS

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
J. Power	6/3/08	1515
RECEIVED BY	Date	Time
[illegible]	6/3/08	1520

Sample Number(s)
L 44379 1-9 (All)

METALS PUMP DIED!

continue ...

WLRD-MERCER ISLAND WQ STORM MONITORING

Project Number: 421195CY Personnel: JP

	(2)	(3)	(4)
Sample No. (Type)	P44379-4	P44379-5	P44379-6
Locator	MERCERISL32	MERCERISL42	MERCERISL42
Short Loc. Desc.			
Locator Desc.			
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time	3-JUN-08/1130	/1205	/1225
End Date/Time			
Time Span			
Sample Depth		AREP	FREP
Comments	Holly Hill Dr-West Island SGT-HEM	Retention Stucture-East Island	Field Rep
COND, FIELD	60.3	152.2	157.5
DO SAT, FIELD	94.6	93.1	93.0
DO, FIELD	9.96	10.06	10.04
PERSONNEL	JP	→	→
PH, FIELD	7.11	7.39	7.40
SAMP TEMP	12.86	11.53	11.52
STRM FLOW	1.0 CFS SWOFFA	0.4 CFS	0.4 CFS
TURB, FIELD	DELETE →	→	→
SAMP FUNC	**********	**********	L44379-5
Dept., Matrix, Prod			
	3 STORM WTR ORTHOP	3 STORM WTR ORTHOP	3 STORM WTR COND
	3 STORM WTR TOTN	3 STORM WTR TOTN	3 STORM WTR ORTHOP
	3 STORM WTR TOTP	3 STORM WTR TOTP	3 STORM WTR TOTN
	3 STORM WTR TSS	3 STORM WTR TSS	3 STORM WTR TOTP
	5 STORM WTR EC-MF	5 STORM WTR EC-MF	3 STORM WTR TSS
	5 STORM WTR FC-MF	5 STORM WTR FC-MF	3 STORM WTR TURB

SOMEWHAT UP-
NOT TOO TURBID
3 FILTERS

continue ...

WLRD-MERCER ISLAND WQ STORM MONITORING

Project Number: 421195CY

Personnel:

Sample No. (Type)	P44379-7	P44379-8(FFB)	P44379-9(FFB)
Locator	ATMOSBLANK	FFBLANK	FFBLANK
Short Loc. Desc.	ATMOSBLANK	FFBLAN K	FFBLAN K
Locator Desc.	ATMOSPHERE BLANK	FIELD FILTER BLANK	FIELD FILTER BLANK
Site	METRO	METRO	METRO
Start Date/Time	3-JUN-08/1025	/1030	/1020
End Date/Time			
Time Span			
Sample Depth			
Comments	atmos blank (metals)	Field filter blank Metals	Field filter blank OrthoP
CLIENT LOC	**********	@ MERCERISL 26	~~@ MERCERISL 26~~
SAMP INFO	**********	METALS FILTER BLANK	~~ORTHOP FIELD FILTER BLANK~~
Dept., Matrix, Prod			
	6 BLANK WTR CR-ICPMS	6 BLANK WTR CR-ICPMS, DISS	3 BLANK WTR ORTHOP
	6 BLANK WTR CU-ICPMS	6 BLANK WTR CU-ICPMS, DISS	
	6 BLANK WTR PB-ICPMS	6 BLANK WTR PB-ICPMS, DISS	
	6 BLANK WTR ZN-ICPMS	6 BLANK WTR ZN-ICPMS, DISS	

P

DELETED?

DELETED

End of Fieldsheet.

LIMSView Batch Report - run on 07/07/08, 09:20 am

WG97094 (conductivity)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-6	421195CY	STORM WTR	6/3/2008 0:12	13-Jun-08	13-Jun-08	WG97094-1, -2	FREP@L44379-5
WG97094-1	LCS	BLANK WTR		13-Jun-08	13-Jun-08	WG97094-1, -2	LEVEL1
WG97094-2	LD	STORM WTR		13-Jun-08	13-Jun-08	WG97094-1, -2	L44379-6

WG96947 (Dissolved Nutrients)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-1	421195CY	STORM WTR	6/3/2008 0:13	3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -21, -22, -23, -24, -25	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14	3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -21, -22, -23, -24, -25	
L44379-3	421195CY	STORM WTR	6/3/2008 0:10	3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -21, -22, -23, -24, -25	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11	3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -21, -22, -23, -24, -25	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12	3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -21, -22, -23, -24, -25	
L44379-6	421195CY	STORM WTR	6/3/2008 0:12	3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -21, -22, -23, -24, -25	FREP@L44379-5
L44379-9	421195CY	BLANK WTR	6/3/2008 0:10	3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -21, -22, -23, -24, -25	
WG96947-1	MB	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	MB1 080604
WG96947-2	SB	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	WG96947-1
WG96947-3	LCS	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	LEVEL1
WG96947-4	LD	STORM WTR		3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	L44952-6
WG96947-5	MS	STORM WTR		3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	L44952-6
WG96947-6	MB	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	MB2 080604
WG96947-7	SB	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	WG96947-6
WG96947-8	LCS	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	LEVEL1
WG96947-9	LD	STORM WTR		3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	L44954-6
WG96947-10	MS	STORM WTR		3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	L44954-6
WG96947-11	MB	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	MB3 080604
WG96947-12	SB	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	WG96947-11
WG96947-13	LCS	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	LEVEL1
WG96947-14	LD	STORM WTR		3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	L44956-6
WG96947-15	MS	STORM WTR		3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	L44956-6
WG96947-16	MB	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	MB4 080604
WG96947-17	SB	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	WG96947-16
WG96947-18	LCS	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	LEVEL1
WG96947-19	LD	STORM WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	L44912-6
WG96947-20	MS	STORM WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -16, -17, -18, -19, -20	L44912-6
WG96947-21	MB	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -21, -22, -23, -24, -25	MB5 080604
WG96947-22	SB	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -21, -22, -23, -24, -25	WG96947-21
WG96947-23	LCS	BLANK WTR		4-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -21, -22, -23, -24, -25	LEVEL1
WG96947-24	LD	STORM WTR		3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -21, -22, -23, -24, -25	L44379-1
WG96947-25	MS	STORM WTR		3-Jun-08	4-Jun-08	WG96947-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -12, -11, -13, -14, -15, -21, -22, -23, -24, -25	L44379-1

WG96946 (pH)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-6	421195CY	STORM WTR	6/3/2008 0:12	5-Jun-08	5-Jun-08	WG96946-1, -2	FREP@L44379-5
WG96946-1	LCS	BLANK WTR		5-Jun-08	5-Jun-08	WG96946-1, -2	LEVEL1
WG96946-2	LD	STORM WTR		5-Jun-08	5-Jun-08	WG96946-1, -2	L44379-6

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WG96998 (Total Nutrients)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-1	421195CY	STORM WTR	6/3/2008 0:13	4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14	4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	
L44379-3	421195CY	STORM WTR	6/3/2008 0:10	4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11	4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12	4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	
L44379-6	421195CY	STORM WTR	6/3/2008 0:12	4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	FREP@L44379-5
WG96998-1	MB	BLANK WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	MB1 080604
WG96998-2	SB	BLANK WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	WG96998-1
WG96998-3	LCS	BLANK WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	LEVEL1
WG96998-4	LD	STORM WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	L44952-8
WG96998-5	MS	STORM WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	L44952-8
WG96998-6	MB	BLANK WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	MB2 080604
WG96998-7	LCS	BLANK WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	LEVEL1
WG96998-8	LD	STORM WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	L44956-6
WG96998-9	MS	STORM WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	L44956-6
WG96998-10	MB	BLANK WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	MB3 080604
WG96998-11	LCS	BLANK WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	LEVEL1
WG96998-12	LD	FRESH WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	L45601-9
WG96998-13	MS	FRESH WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	L45601-9
WG96998-14	LD	STORM WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	L45686-2
WG96998-15	MS	STORM WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	L45686-2
WG96998-16	MB	BLANK WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	MB4 080604
WG96998-17	LCS	BLANK WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	LEVEL1
WG96998-18	LD	STORM WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	L44379-4
WG96998-19	MS	STORM WTR		4-Jun-08	10-Jun-08	WG96998-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12, -13, -14, -15, -16, -17, -18, -19	L44379-4

WG96942 (Total Suspended Solids)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-1	421195CY	STORM WTR	6/3/2008 0:13	6-Jun-08	6-Jun-08	WG96942-1, -2, -3, -4	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14	6-Jun-08	6-Jun-08	WG96942-1, -2, -3, -4	
L44379-3	421195CY	STORM WTR	6/3/2008 0:10	6-Jun-08	6-Jun-08	WG96942-1, -2, -3, -4	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11	6-Jun-08	6-Jun-08	WG96942-1, -2, -3, -4	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12	6-Jun-08	6-Jun-08	WG96942-1, -2, -3, -4	
L44379-6	421195CY	STORM WTR	6/3/2008 0:12	6-Jun-08	6-Jun-08	WG96942-1, -2, -3, -4	FREP@L44379-5
WG96942-1	MB	BLANK WTR		6-Jun-08	6-Jun-08	WG96942-1, -2, -3, -4	MB8 080606
WG96942-2	LCS	BLANK WTR		6-Jun-08	6-Jun-08	WG96942-1, -2, -3, -4	LEVEL1
WG96942-3	LD	STORM WTR		6-Jun-08	6-Jun-08	WG96942-1, -2, -3, -4	L45103-2
WG96942-4	LD	STORM WTR		6-Jun-08	6-Jun-08	WG96942-1, -2, -3, -4	L45686-3

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WG96878 (Turbidity)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-1	421195CY	STORM WTR	6/3/2008 0:13	4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14	4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	
L44379-3	421195CY	STORM WTR	6/3/2008 0:10	4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11	4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12	4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	
L44379-6	421195CY	STORM WTR	6/3/2008 0:12	4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	FREP@L44379-5
WG96878-1	LCS	BLANK WTR		4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	LEVEL1
WG96878-2	LD	STORM WTR		4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	L44952-1
WG96878-3	LD	STORM WTR		4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	L44954-1
WG96878-4	LCS	BLANK WTR		4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	LEVEL1
WG96878-5	LCS	BLANK WTR		4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	LEVEL1
WG96878-6	LD	STORM WTR		4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	L44379-1
WG96878-7	LCS	BLANK WTR		4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	LEVEL2
WG96878-8	LCS	BLANK WTR		4-Jun-08	4-Jun-08	WG96878-1, -2, -3, -4, -5, -6, -7, -8	LEVEL2

WG97252 (Field Data)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-1	421195CY	STORM WTR	6/3/2008 0:13			WG97252-6, -7	
L44379-1	421195CY	STORM WTR	6/3/2008 0:13			WG97252-6, -7	
L44379-1	421195CY	STORM WTR	6/3/2008 0:13			WG97252-6, -7	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14			WG97252-6, -7	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14			WG97252-6, -7	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14			WG97252-6, -7	
L44379-3	421195CY	STORM WTR	6/3/2008 0:10			WG97252-6, -7	
L44379-3	421195CY	STORM WTR	6/3/2008 0:10			WG97252-6, -7	
L44379-3	421195CY	STORM WTR	6/3/2008 0:10			WG97252-6, -7	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11			WG97252-6, -7	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11			WG97252-6, -7	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11			WG97252-6, -7	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12			WG97252-6, -7	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12			WG97252-6, -7	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12			WG97252-6, -7	
L44379-6	421195CY	STORM WTR	6/3/2008 0:12			WG97252-6, -7	FREP@L44379-5
L44379-6	421195CY	STORM WTR	6/3/2008 0:12			WG97252-6, -7	FREP@L44379-5
L44379-6	421195CY	STORM WTR	6/3/2008 0:12			WG97252-6, -7	FREP@L44379-5
L44379-9	421195CY	BLANK WTR	6/3/2008 0:10			WG97252-6, -7	
WG97252-6	CS	BLANK WTR				WG97252-6, -7	RANGE1
WG97252-7	FREP	STORM WTR				WG97252-6, -7	L44379-5 RANGE1

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WG96855 (E. Coli)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-1	421195CY	STORM WTR	6/3/2008 0:13		4-Jun-08	WG96843-2, -3, WG96844-4, -5, WG96855-1	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14		4-Jun-08	WG96843-2, -3, WG96844-4, -5, WG96855-1	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11		4-Jun-08	WG96843-2, -3, WG96844-4, -5, WG96855-1	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12		4-Jun-08	WG96843-2, -3, WG96844-4, -5, WG96855-1	
L44379-6	421195CY	STORM WTR	6/3/2008 0:12		4-Jun-08	WG96843-2, -3, WG96844-4, -5, WG96855-1	FREP@L44379-5
WG96855-1	LD	STORM WTR			4-Jun-08	WG96843-2, -3, WG96844-4, -5, WG96855-1	L44379-4
WG96843-2	PC	STORM WTR			4-Jun-08		QC-PERFORMED:03-JUN-08
WG96843-3	NC	STORM WTR			4-Jun-08		QC-PERFORMED:03-JUN-08
WG96844-4	BF	BLANK WTR			4-Jun-08		QC-PERFORMED:03-JUN-08
WG96844-5	AF	BLANK WTR			4-Jun-08		QC-PERFORMED:03-JUN-08

WG96890 (E. coli)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-3	421195CY	STORM WTR	6/3/2008 0:10		5-Jun-08	WG96885-4, -5, WG96890-1, -2	
WG96890-1	PC	BLANK WTR			5-Jun-08	WG96885-4, -5, WG96890-1, -2	QC-PERFORMED:04-JUN-08
WG96890-2	NC	BLANK WTR			5-Jun-08	WG96885-4, -5, WG96890-1, -2	QC-PERFORMED:04-JUN-08
WG96885-4	BF	BLANK WTR			5-Jun-08		QC-PERFORMED:04-JUN-08
WG96885-5	AF	BLANK WTR			5-Jun-08		QC-PERFORMED:04-JUN-08

WG96856 (Fecal coliform)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-1	421195CY	STORM WTR	6/3/2008 0:13		4-Jun-08	WG96856-1, WG96844-2, -3, -4, -5	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14		4-Jun-08	WG96856-1, WG96844-2, -3, -4, -5	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11		4-Jun-08	WG96856-1, WG96844-2, -3, -4, -5	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12		4-Jun-08	WG96856-1, WG96844-2, -3, -4, -5	
L44379-6	421195CY	STORM WTR	6/3/2008 0:12		4-Jun-08	WG96856-1, WG96844-2, -3, -4, -5	FREP@L44379-5
WG96856-1	LD	STORM WTR			4-Jun-08	WG96856-1, WG96844-2, -3, -4, -5	L44379-4
WG96844-2	PC	BLANK WTR			4-Jun-08		QC-PERFORMED:03-JUN-08
WG96844-3	NC	BLANK WTR			4-Jun-08		QC-PERFORMED:03-JUN-08
WG96844-4	BF	BLANK WTR			4-Jun-08		QC-PERFORMED:03-JUN-08
WG96844-5	AF	BLANK WTR			4-Jun-08		QC-PERFORMED:03-JUN-08

WG96891 (Fecal coliform)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-3	421195CY	STORM WTR	6/3/2008 0:10		5-Jun-08	WG96875-1, -2, -3, -4, -5	
WG96875-1	LD	FRESH WTR			5-Jun-08		L45792-2
WG96875-2	PC	BLANK WTR			5-Jun-08		QC-PERFORMED:04-JUN-08
WG96875-3	NC	BLANK WTR			5-Jun-08		QC-PERFORMED:04-JUN-08
WG96875-4	BF	BLANK WTR			5-Jun-08		QC-PERFORMED:04-JUN-08
WG96875-5	AF	BLANK WTR			5-Jun-08		QC-PERFORMED:04-JUN-08

LIMSView Batch Report - run on 07/07/08, 09:20 am

WG97301 (Total Metals by ICPMS)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45761-9	421196AI	GRND WTR	6/18/2008 0:00	27-Jun-08	30-Jun-08	WG97301-1, -2, -3, -4	
L44379-1	421195CY	STORM WTR	6/3/2008 0:13	27-Jun-08	30-Jun-08	WG97301-1, -2, -3, -4	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14	27-Jun-08	30-Jun-08	WG97301-1, -2, -3, -4	
L44379-3	421195CY	STORM WTR	6/3/2008 0:10	27-Jun-08	30-Jun-08	WG97301-1, -2, -3, -4	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11	27-Jun-08	30-Jun-08	WG97301-1, -2, -3, -4	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12	27-Jun-08	30-Jun-08	WG97301-1, -2, -3, -4	
L44379-6	421195CY	STORM WTR	6/3/2008 0:12	27-Jun-08	30-Jun-08	WG97301-1, -2, -3, -4	
L44379-7	421195CY	BLANK WTR	6/3/2008 0:00	27-Jun-08	30-Jun-08	WG97301-1, -2, -3, -4	FREP@L44379-5
WG97301-1	MB	BLANK WTR		27-Jun-08	30-Jun-08	WG97301-1, -2, -3, -4	METHOD BLANK
WG97301-2	SB	BLANK WTR		27-Jun-08	30-Jun-08	WG97301-1, -2, -3, -4	WG97301-1 MS-20 SPIKE BLANK
WG97301-3	LD	STORM WTR		27-Jun-08	30-Jun-08	WG97301-1, -2, -3, -4	L45761-9 RPD-LIQ LAB DUPLICATE
WG97301-4	MS	STORM WTR		27-Jun-08	30-Jun-08	WG97301-1, -2, -3, -4	L45761-9 MS-20 MATRIX SPIKE

WG97313 (Herbicides)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-1	421195CY	STORM WTR	6/3/2008 0:13	9-Jun-08			
L44379-2	421195CY	STORM WTR	6/3/2008 0:14	9-Jun-08			
L44379-3	421195CY	STORM WTR	6/3/2008 0:10	9-Jun-08			
L44379-4	421195CY	STORM WTR	6/3/2008 0:11	9-Jun-08			
L44379-5	421195CY	STORM WTR	6/3/2008 0:12	9-Jun-08			
L44379-6	421195CY	STORM WTR	6/3/2008 0:12	9-Jun-08			FREP@L44379-5

WG96908 (Organophosphorus Pesticides - short list)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-1	421195CY	STORM WTR	6/3/2008 0:13	5-Jun-08	11-Jun-08	WG96908-1, -2, -3, -4	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14	5-Jun-08	11-Jun-08	WG96908-1, -2, -3, -4	
L44379-3	421195CY	STORM WTR	6/3/2008 0:10	5-Jun-08	11-Jun-08	WG96908-1, -2, -3, -4	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11	5-Jun-08	11-Jun-08	WG96908-1, -2, -3, -4	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12	5-Jun-08	11-Jun-08	WG96908-1, -2, -3, -4	
L44379-6	421195CY	STORM WTR	6/3/2008 0:12	5-Jun-08	11-Jun-08	WG96908-1, -2, -3, -4	FREP@L44379-5
WG96908-1	MB	BLANK WTR		5-Jun-08	11-Jun-08	WG96908-1, -2, -3, -4	MB080605
WG96908-2	SB	BLANK WTR		5-Jun-08	11-Jun-08	WG96908-1, -2, -3, -4	WG96908-1
WG96908-3	MS	STORM WTR		5-Jun-08	11-Jun-08	WG96908-1, -2, -3, -4	L44379-3
WG96908-4	MSD	STORM WTR		5-Jun-08	11-Jun-08	WG96908-1, -2, -3, -4	WG96908-3 L44379-3

LIMSView Batch Report - run on 07/07/08, 09:20 am

WG96973 (Silica Gel Treated Hexane Extractable Material)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-1	421195CY	STORM WTR	6/3/2008 0:13	6-Jun-08	9-Jun-08	WG96973-1, -2, -3	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14	6-Jun-08	9-Jun-08	WG96973-1, -2, -3	
L44379-3	421195CY	STORM WTR	6/3/2008 0:10	6-Jun-08	9-Jun-08	WG96973-1, -2, -3	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11	6-Jun-08	9-Jun-08	WG96973-1, -2, -3	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12	6-Jun-08	9-Jun-08	WG96973-1, -2, -3	
L44379-6	421195CY	STORM WTR	6/3/2008 0:12	6-Jun-08	9-Jun-08	WG96973-1, -2, -3	FREP@L44379-5
WG96973-1	MB	BLANK WTR		6-Jun-08	9-Jun-08	WG96973-1, -2, -3	EXTRACTION BLANK 06-JUN-08
WG96973-2	SB	BLANK WTR		6-Jun-08	9-Jun-08	WG96973-1, -2, -3	WG96973-1
WG96973-3	MS	STORM WTR		6-Jun-08	9-Jun-08	WG96973-1, -2, -3	L44379-4

WG96905 (WTPH-Hydrocarbon Identification)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L44379-1	421195CY	STORM WTR	6/3/2008 0:13	4-Jun-08	7-Jun-08	WG96905-1, -4	
L44379-2	421195CY	STORM WTR	6/3/2008 0:14	4-Jun-08	7-Jun-08	WG96905-1, -4	
L44379-3	421195CY	STORM WTR	6/3/2008 0:10	4-Jun-08	7-Jun-08	WG96905-1, -4	
L44379-4	421195CY	STORM WTR	6/3/2008 0:11	4-Jun-08	7-Jun-08	WG96905-1, -4	
L44379-5	421195CY	STORM WTR	6/3/2008 0:12	4-Jun-08	7-Jun-08	WG96905-1, -4	
L44379-6	421195CY	STORM WTR	6/3/2008 0:12	4-Jun-08	7-Jun-08	WG96905-1, -4	FREP@L44379-5
WG96905-1	MB	BLANK WTR		4-Jun-08	6-Jun-08	WG96905-1, -4	MB080604
WG96905-4	LD	STORM WTR		4-Jun-08	6-Jun-08	WG96905-1, -4	L44379-3

LIMSView Analytical QC Report - run on 07/07/08 09:21 am

Workgroup: WG97094 (Conductivity)

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Conductivity	1	5	umhos/cm	73.9	73.9	100		90--110

(Lab Duplicate) L44379-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Conductivity	1	5	umhos/cm	163	159	3		10

Workgroup: WG96947 (Dissolved Nutrients)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Ammonia Nitrogen	0.01	0.02	mg/L	<MDL	

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	<MDL	

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	<MDL	0.1	0.0989	99		80--120

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	0.04	0.0398	100		80--120

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	<MDL	0.8	0.801	100		80--120

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	0.1	0.0861	86		85--115

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	0.8	0.831	104		85--115

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.04	0.0376	94		85--115

(Lab Duplicate) L44952-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	0.047	0.0474	1		20

(Lab Duplicate) L44952-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	0.407	0.419	3		20

(Lab Duplicate) L44952-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.017	0.017	0		20

(Matrix Spike) L45952-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	0.047	0.1	0.15	103		75--125

(Matrix Spike) L45952-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	0.407	0.8	1.19	98		75--125

(Matrix Spike) L45952-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.017	0.04	0.0559	97		75--125

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Ammonia Nitrogen	0.01	0.02	mg/L	<MDL	

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	<MDL	0.8	0.806	101		80--120

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	<MDL	0.1	0.0983	98		80--120

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	0.04	0.0399	100		80--120

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	0.8	0.822	103		85--115

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	0.1	0.103	103		85--115

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.04	0.0408	102		85--115

(Lab Duplicate) L44954-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.0152	0.015	2		20

(Lab Duplicate) L44954-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	0.0212	0.02	7		20

(Lab Duplicate) L44954-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	0.617	0.623	1		20

(Matrix Spike) L45954-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.0152	0.04	0.0537	96		75--125

(Matrix Spike) L45954-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	0.617	0.8	1.42	100		75--125

(Matrix Spike) L45954-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	0.0212	0.1	0.119	98		75--125

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Ammonia Nitrogen	0.01	0.02	mg/L	<MDL	

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	<MDL	0.8	0.801	100		80--120

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	<MDL	0.1	0.0986	99		80--120

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	0.04	0.0406	101		80--120

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	0.8	0.822	103		85--115

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	0.1	0.104	104		85--115

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.04	0.0401	100		85--115

(Lab Duplicate) L45956-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	<MDL	<MDL			20

(Lab Duplicate) L45956-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	0.0758	0.0761	0		20

(Lab Duplicate) L45956-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.00652	0.00631	3		20

(Matrix Spike) L45956-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	<MDL	0.1	0.0995	99		75--125

(Matrix Spike) L45956-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	0.0758	0.8	0.871	99		75--125

(Matrix Spike) L45956-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.00652	0.04	0.0461	99		75--125

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	<MDL	

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Ammonia Nitrogen	0.01	0.02	mg/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	<MDL	0.1	0.101	101		80--120

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	<MDL	0.8	0.797	100		80--120

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Ammonia Nitrogen	0.01	0.02	mg/L	0.1	0.102	102		85--115

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	0.8	0.802	100		85--115

(Lab Duplicate) L44912-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Ammonia Nitrogen	1	2	mg/L	7.42	7.74	4		20

(Lab Duplicate) L44912-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	0.436	0.434	1		20

(Matrix Spike) L44912-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Ammonia Nitrogen	1	2	mg/L	7.42	10	17.6	102		75--125

(Matrix Spike) L44912-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Nitrite + Nitrate Nitrogen	0.02	0.04	mg/L	0.436	0.8	1.24	100		75--125

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	0.04	0.0399	100		80--120

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.04	0.0405	101		85--115

(Lab Duplicate) L44379-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.0332	0.0337	2		20

(Matrix Spike) L44379-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.0332	0.04	0.0705	93		75--125

Workgroup: WG96946 (pH)

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
pH			pH	6.86	6.9	101		98--102

(Lab Duplicate) L44379-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
pH			pH	7.28	7.43	0.15		0.2

Workgroup: WG96998 (Total Nutrients)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Nitrogen	0.05	0.1	mg/L	<MDL	

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Phosphorus	0.005	0.01	mg/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	<MDL	0.1	0.098	98		80--120

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	<MDL	1	0.961	96		80--120

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	1	0.979	98		85--115

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.1	0.0857	86		85--115

(Lab Duplicate) L44952-8

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	1.05	1.06	1		20

(Lab Duplicate) L44952-8

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.119	0.12	1		20

(Matrix Spike) L44952-8

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.119	0.1	0.215	96		75--125

(Matrix Spike) L44952-8

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	1.05	1	2.06	101		75--125

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Nitrogen	0.05	0.1	mg/L	<MDL	

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Phosphorus	0.005	0.01	mg/L	<MDL	

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	1	0.879	88		85--115

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.1	0.09	90		85--115

(Lab Duplicate) L44956-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	0.119	0.12	1		20

(Lab Duplicate) L44956-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.0166	0.0154	8		20

(Matrix Spike) L44956-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	0.119	1	1.1	98		75--125

(Matrix Spike) L44956-6

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.0166	0.1	0.119	102		75--125

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Phosphorus	0.005	0.01	mg/L	<MDL	

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Nitrogen	0.05	0.1	mg/L	<MDL	

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.1	0.106	106		85--115

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	1	0.943	94		85--115

(Lab Duplicate) L45601-9

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	0.203	0.236	15		20

(Matrix Spike) L45601-9

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	0.203	1	1.16	95		75--125

(Lab Duplicate) L45686-2

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.0545	0.0551	1		20

(Lab Duplicate) L45686-2

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	0.623	0.61	2		20

(Matrix Spike) L45686-2

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	0.623	1	1.6	97		75--125

(Matrix Spike) L45686-2

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.0545	0.1	0.161	106		75--125

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Phosphorus	0.005	0.01	mg/L	<MDL	

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Nitrogen	0.05	0.1	mg/L	<MDL	

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	1	0.904	90		85--115

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.1	0.105	105		85--115

(Lab Duplicate) L44379-4

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.123	0.126	3		20

(Lab Duplicate) L44379-4

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	0.935	0.951	2		20

(Matrix Spike) L44379-4

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	0.935	1	1.92	98		75--125

(Matrix Spike) L44379-4

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.123	0.1	0.231	108		75--125

Workgroup: WG96942 (Total Suspended Solids)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Total Suspended Solids	5	10	mg/L	100	93	93		80--120

(Lab Duplicate) L45103-2

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Suspended Solids	1	1.9	mg/L	22.1	19.2	14		25

(Lab Duplicate) L45686-3

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Suspended Solids	1	2	mg/L	2.75	2.94	7		25

Workgroup: WG96878 (Turbidity)

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Turbidity	0.5	2	NTU	10	10.2	102		90--110

(Lab Duplicate) L44952-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Turbidity	0.5	2	NTU	39.4	38.7	2		20

(Lab Duplicate) L44954-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Turbidity	0.5	2	NTU	10.5	10.4	1		20

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Turbidity	0.5	2	NTU	10	10.2	102		90--110

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Turbidity	0.5	2	NTU	10	10.3	103		90--110

(Lab Duplicate) L44379-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Turbidity	0.5	2	NTU	29	29	0		20

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Turbidity	0.5	2	NTU	100	91.9	92		90--110

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Turbidity	0.5	2	NTU	100	92.8	93		90--110

Workgroup: WG97252 (Field Parameters)

(Check Standard)

Parameter	MDL	RDL	Units	TrueValue	CS Value	% Rec.	Qual	LabLimit
Conductivity, Field	0.5	10	umhos/cm	73.9	74.7	101		90--110
Dissolved Oxygen Saturation, Field			%	100	98	98		96--104
pH, Field			pH	6.86	6.94	0.08		0--.2

(Field Replicate) L44379-5

Parameter	MDL	RDL	Units	SampValue	FREP Value	RPD^	Qual	LabLimit
Conductivity, Field	0.5	10	umhos/cm	152	158	3		10
Dissolved Oxygen, Field	0.5	1	mg/L	10.1	10	0		20
Sample Temperature, Field			deg C	11.53	11.52	0.01		0.3
pH, Field			pH	7.39	7.4	0.01		0.2

Workgroup: WG96855 (E. coli)

(Lab Duplicate) L44379-4

Parameter	MDL	RDL	Units	SampValue	LD Value	Rlog	P value	Qual
Escherichia coli			CFU/100ml	2400	3000	0.1	0.33	N3

(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Escherichia coli			CFU/100ml		PASS

(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Escherichia coli			CFU/100ml		PASS

(Before Membrane Filtration)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

(After Membrane Filtration)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

Workgroup: WG96890 (E. coli)

(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Escherichia coli			CFU/100ml		PASS

(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Escherichia coli			CFU/100ml		PASS

(Before Membrane Filtration)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

(After Membrane Filtration)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

Workgroup: WG96856 (Fecal coliform)

(Lab Duplicate) L44379-4

Parameter	MDL	RDL	Units	SampValue	LD Value	Rlog	P value	Qual
Fecal Coliform			CFU/100ml	2800	2900	0.02	0.02	N3

(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

(Before Membrane Filtration)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

(After Membrane Filtration)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

Workgroup: WG96891 (Fecal coliform)

(Lab Duplicate) L45792-2

Parameter	MDL	RDL	Units	SampValue	LD Value	Rlog	P value	Qual
Fecal Coliform			CFU/100ml	15000	13000	0.06	0.26	N15

(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

(Before Membrane Filtration)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

(After Membrane Filtration)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

Workgroup: WG97301 (Total Metals by ICPMS)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Arsenic, Total, ICP-MS	0.5	2.5	ug/L	<MDL	
Chromium, Total, ICP-MS	0.4	2	ug/L	<MDL	
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	
Lead, Total, ICP-MS	0.2	1	ug/L	<MDL	
Nickel, Total, ICP-MS	0.3	1.5	ug/L	<MDL	
Selenium, Total, ICP-MS	1.5	7.5	ug/L	<MDL	
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Arsenic, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.5	103		85--115
Chromium, Total, ICP-MS	0.4	2	ug/L	<MDL	20	20.5	103		85--115
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	20	20.8	104		85--115
Lead, Total, ICP-MS	0.2	1	ug/L	<MDL	20	20.7	103		85--115
Nickel, Total, ICP-MS	0.3	1.5	ug/L	<MDL	20	21.8	109		85--115
Selenium, Total, ICP-MS	1.5	7.5	ug/L	<MDL	20	20.6	103		85--115
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.7	104		85--115

(Lab Duplicate) L45761-9

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Arsenic, Total, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20
Chromium, Total, ICP-MS	0.4	2	ug/L	<MDL	<MDL			20
Copper, Total, ICP-MS	0.4	2	ug/L	1.5	1.5			20
Lead, Total, ICP-MS	0.2	1	ug/L	<MDL	<MDL			20
Nickel, Total, ICP-MS	0.3	1.5	ug/L	0.65	0.67			20
Selenium, Total, ICP-MS	1.5	7.5	ug/L	<MDL	<MDL			20
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20

(Matrix Spike) L45761-9

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Arsenic, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	19.9	99		70--130
Chromium, Total, ICP-MS	0.4	2	ug/L	<MDL	20	20.5	102		70--130
Copper, Total, ICP-MS	0.4	2	ug/L	1.5	20	21.5	100		70--130
Lead, Total, ICP-MS	0.2	1	ug/L	<MDL	20	20.1	101		70--130
Nickel, Total, ICP-MS	0.3	1.5	ug/L	0.65	20	21.7	105		70--130
Selenium, Total, ICP-MS	1.5	7.5	ug/L	<MDL	20	19	95		70--130
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	19.3	96		70--130

Workgroup: WG97313 (Herbicides)
Subcontract Lab QC attached

Workgroup: WG96908 (Orthophosphorus Pesticides - short list)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Chlorpyrifos	0.034	0.05	ug/L	<MDL	
Diazinon	0.043	0.05	ug/L	<MDL	
Disulfoton	0.027	0.05	ug/L	<MDL	
Malathion	0.048	0.05	ug/L	<MDL	
Parathion-Ethyl	0.045	0.05	ug/L	<MDL	
Parathion-Methyl	0.036	0.05	ug/L	<MDL	
Phorate	0.033	0.05	ug/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Chlorpyrifos	0.032	0.0472	ug/L	<MDL	0.236	0.227	96		50--150
Diazinon	0.041	0.0472	ug/L	<MDL	0.236	0.22	93		50--150
Disulfoton	0.025	0.0472	ug/L	<MDL	0.236	0.211	90		50--150
Malathion	0.045	0.0472	ug/L	<MDL	0.236	0.297	126		50--150
Parathion-Ethyl	0.042	0.0472	ug/L	<MDL	0.236	0.344	146		50--150
Parathion-Methyl	0.034	0.0472	ug/L	<MDL	0.236	0.349	148		50--150
Phorate	0.031	0.0472	ug/L	<MDL	0.236	0.206	87		50--150

(Matrix Spike Duplicate, Matrix Spike) L44379-3

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Chlorpyrifos	0.032	0.0472	ug/L	<MDL	0.25	0.199	80		50--150	0.236	0.225	96		18		100
Diazinon	0.041	0.0472	ug/L	<MDL	0.25	0.156	62		50--150	0.236	0.21	89		36		100
Disulfoton	0.025	0.0472	ug/L	<MDL	0.25	0.125	50		50--150	0.236	0.208	88		55		100
Malathion	0.045	0.0472	ug/L	<MDL	0.25	0.187	75		50--150	0.236	0.28	119		45		100
Parathion-Ethyl	0.042	0.0472	ug/L	<MDL	0.25	0.182	73		50--150	0.236	0.296	126		53		100
Parathion-Methyl	0.034	0.0472	ug/L	<MDL	0.25	0.182	73		50--150	0.236	0.294	125		53		100
Phorate	0.031	0.0472	ug/L	<MDL	0.25	0.157	63		50--150	0.236	0.21	89		34		100

Surrogate:	Chlorpyrifos-D10
(Lab Limits)	0--164
L44379-1	98
L44379-2	99
L44379-3	100
L44379-4	98
L44379-5	103
L44379-6	92
WG96908-1	67
WG96908-2	101
WG96908-3	89
WG96908-4	98

Workgroup: WG96973 (Silica Gel Treated Hexane Extractable Material)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
SGT-Hem (oil, nonpolar)	2	5	mg/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
SGT-Hem (oil, nonpolar)	2	5	mg/L	<MDL	20	21.6	108		64--132

(Matrix Spike) L44379-4

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
SGT-Hem (oil, nonpolar)	2	5	mg/L	<MDL	20	14	70		64--132

Workgroup: WG96905 (WTPH-Hydrocarbon Identification)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Diesel Range (>C12 Thru C24)	0.63	0.63	mg/L	<MDL	
Gasoline Range (C7 Thru C12)	0.25	0.25	mg/L	<MDL	
Lube Oil Range (>C24)	0.63	0.63	mg/L	<MDL	

(Lab Duplicate) L44379-3

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Diesel Range (>C12 Thru C24)	0.6	0.6	mg/L	<MDL	<MDL			100
Gasoline Range (C7 Thru C12)	0.24	0.24	mg/L	<MDL	<MDL			100
Lube Oil Range (>C24)	0.6	0.6	mg/L	<MDL	<MDL			100

Surrogate:	2-Fluorobiphenyl	4-Bromofluorobenzene	Pentacosane
(Lab Limits)	**50--150**	**50--150**	**50--150**
L44379-1	87	80	97
L44379-2	88	84	103
L44379-3	86	81	99
L44379-4	90	82	108
L44379-5	89	82	99
L44379-6	91	89	101
WG96905-1	84	61	86
WG96905-4	90	84	93

^ For the following parameters, the values in RPD column are Absolute Difference:

pH
pH, Field
Salinity
Salinity, Field
sample Depth
sample Temperature, Field

SAMPLE SUMMARY

Client: King County WPCD Environmental Lab

Job Number: 580-10225-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
580-10225-1	P44379-1	Water	06/03/2008 0000	06/06/2008 1205
580-10225-2	P44379-2	Water	06/03/2008 0000	06/06/2008 1205
580-10225-2MS	P44379-2	Water	06/03/2008 0000	06/06/2008 1205
580-10225-2MSD	P44379-2	Water	06/03/2008 0000	06/06/2008 1205
580-10225-3	P44379-3	Water	06/03/2008 0000	06/06/2008 1205
580-10225-4	P44379-4	Water	06/03/2008 0000	06/06/2008 1205
580-10225-5	P44379-5	Water	06/03/2008 0000	06/06/2008 1205
580-10225-6	P44379-6	Water	06/03/2008 0000	06/06/2008 1205

Client: King County WPCD Environmental Lab

Job Number: 580-10225-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 580-32375					
LCS 580-32375/2-A	Lab Control Spike	T	Water	8151A	
MB 580-32375/1-A	Method Blank	T	Water	8151A	
580-10225-1	P44379-1	T	Water	8151A	
580-10225-2	P44379-2	T	Water	8151A	
580-10225-2MS	Matrix Spike	T	Water	8151A	
580-10225-2MSD	Matrix Spike Duplicate	T	Water	8151A	
580-10225-3	P44379-3	T	Water	8151A	
580-10225-4	P44379-4	T	Water	8151A	
580-10225-5	P44379-5	T	Water	8151A	
580-10225-6	P44379-6	T	Water	8151A	
Analysis Batch:580-32489					
LCS 580-32375/2-A	Lab Control Spike	T	Water	8151A	580-32375
MB 580-32375/1-A	Method Blank	T	Water	8151A	580-32375
580-10225-1	P44379-1	T	Water	8151A	580-32375
580-10225-2	P44379-2	T	Water	8151A	580-32375
580-10225-2MS	Matrix Spike	T	Water	8151A	580-32375
580-10225-2MSD	Matrix Spike Duplicate	T	Water	8151A	580-32375
580-10225-3	P44379-3	T	Water	8151A	580-32375
580-10225-4	P44379-4	T	Water	8151A	580-32375
580-10225-5	P44379-5	T	Water	8151A	580-32375
580-10225-6	P44379-6	T	Water	8151A	580-32375

Report Basis
T = Total

Client: King County WPCD Environmental Lab

Job Number: 580-10225-1

Method Blank - Batch: 580-32375

Method: 8151A
Preparation: 8151A

Lab Sample ID: MB 580-32375/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/09/2008 2237
Date Prepared: 06/09/2008 0944

Analysis Batch: 580-32489
Prep Batch: 580-32375
Units: ug/L

Instrument ID: SEA008
Lab File ID: L28158.D
Initial Weight/Volume: 125 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Result	Qual	MDL	RL
Dalapon	ND		0.034	0.40
Dicamba	ND		0.017	0.20
Mecoprop	ND		0.011	0.20
MCPA	ND		0.015	0.20
Dichlorprop	ND		0.019	0.20
2,4-D	ND		0.0092	0.20
Silvex (2,4,5-TP)	ND		0.017	0.20
2,4,5-T	ND		0.012	0.20
Dinoseb	ND		0.044	0.20
2,4-DB	ND		0.017	0.20

Surrogate	% Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	94	40 - 135

Lab Control Spike - Batch: 580-32375

Method: 8151A
Preparation: 8151A

Lab Sample ID: LCS 580-32375/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/09/2008 2302
Date Prepared: 06/09/2008 0944

Analysis Batch: 580-32489
Prep Batch: 580-32375
Units: ug/L

Instrument ID: SEA008
Lab File ID: L28159.D
Initial Weight/Volume: 125 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dalapon	8.00	7.28	91	16 - 103	
Dicamba	8.00	9.26	116	51 - 125	
Mecoprop	8.00	6.65	83	57 - 139	
MCPA	8.00	7.97	100	60 - 145	
Dichlorprop	8.00	7.49	94	70 - 120	
2,4-D	8.00	7.17	90	42 - 128	
Silvex (2,4,5-TP)	8.00	6.98	87	63 - 119	
Dinoseb	8.00	8.98	112	17 - 153	
2,4-DB	8.00	7.03	88	35 - 115	

Surrogate	% Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	87	40 - 135

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: King County WPCD Environmental Lab

Job Number: 580-10225-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 580-32375

Method: 8151A
Preparation: 8151A

MS Lab Sample ID: 580-10225-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/09/2008 2326
Date Prepared: 06/09/2008 0944

Analysis Batch: 580-32489
Prep Batch: 580-32375

Instrument ID: SEA008
Lab File ID: L28160.D
Initial Weight/Volume: 125 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

MSD Lab Sample ID: 580-10225-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/09/2008 2350
Date Prepared: 06/09/2008 0944

Analysis Batch: 580-32489
Prep Batch: 580-32375

Instrument ID: SEA008
Lab File ID: L28161.D
Initial Weight/Volume: 125 mL
Final Weight/Volume: 1 mL
Injection Volume: 1.0 uL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Dalapon	56	59	16 - 103	5	39		
Dicamba	94	91	51 - 125	3	19		
Mecoprop	75	70	57 - 139	8	22		
MCPA	86	89	60 - 145	3	30		
Dichlorprop	76	80	70 - 120	5	30		
2,4-D	74	78	42 - 128	6	15		
Silvex (2,4,5-TP)	69	74	63 - 119	7	17		
Dinoseb	56	88	17 - 153	44	33		F
2,4-DB	79	78	35 - 115	0	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	85	94	40 - 135

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: King County WPCD Environmental Lab

Job Number: 580-10225-1

Matrix Spike/
Matrix Spike Duplicate Data Report - Batch: 580-32375

Method: 8151A
Preparation: 8151A

MS Lab Sample ID: 580-10225-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/09/2008 2326
Date Prepared: 06/09/2008 0944

Units: ug/L

MSD Lab Sample ID: 580-10225-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 06/09/2008 2350
Date Prepared: 06/09/2008 0944

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual	
Dalapon	ND	8.00	8.00	4.49	4.71	
Dicamba	ND	8.00	8.00	7.52	7.27	
Mecoprop	ND	8.00	8.00	6.00	5.56	
MCPA	ND	8.00	8.00	6.89	7.09	
Dichlorprop	ND	8.00	8.00	6.12	6.42	
2,4-D	ND	8.00	8.00	5.90	6.27	
Silvex (2,4,5-TP)	ND	8.00	8.00	5.55	5.94	
Dinoseb	ND	8.00	8.00	4.49	7.06	F
2,4-DB	ND	8.00	8.00	6.28	6.27	

Calculations are performed before rounding to avoid round-off errors in calculated results.

DATA REPORTING QUALIFIERS

Client: King County WPCD Environmental Lab

Job Number: 580-10225-1

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	F	RPD of the MS and MSD exceeds the control limits

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

January 26, 2009

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195CY
Mercer Island Stormwater Monitoring,
Samples L45813-1 to 9

Attached is the comprehensive report for the water samples collected and delivered to the laboratory on December 12, 2008. The samples were analyzed in the Organics, Metals, Microbiology and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:
There were no anomalies associated with the preparation and the analysis of these samples.

Metals:
There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:
There were no anomalies associated with the preparation and the analysis of these samples.

Organics:

Oil, Non-Polar Analysis:
There were no anomalies associated with the analysis of these samples.

Herbicide Analyses:
Herbicide analysis was subcontracted to TestAmerica Tacoma. There were no anomalies associated with the analysis of these samples.

Organophosphorus Pesticides (short list) Analyses:
There were no anomalies associated with the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL06	MERCERISL10	MERCERISL26	MERCERISL32
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	FOREST AVE. AND 84	CREEK NEAR HOLLYHI
Sampled:	12/12/08 2:18:00 PM	12/12/08 3:05:00 PM	12/12/08 12:06:00 PM	12/12/08 12:47:00 PM
TimeSpan:				
Lab ID:	L45813-1	L45813-2	L45813-3	L45813-4
Matrix:	STORM WTR	STORM WTR	STORM WTR	STORM WTR
% Solids:				

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis		
COMBINED LABS																				
M=CV SM2130-B																				
Turbidity																				
M=CV SM2510-B (302V4)																				
Conductivity																				
M=CV SM2540-D (309V3)																				
Total Suspended Solids	20.4		0.6	1.3	mg/L	61.3		3.3	6.7	mg/L	31.1		0.5	1	mg/L	33		1.3	2.5	mg/L
M=CV SM4500-H-B																				
pH																				
M=CV SM4500-N-C (331V3)C																				
Total Nitrogen	0.553		0.05	0.1	mg/L	0.63		0.05	0.1	mg/L	1.25		0.05	0.1	mg/L	0.995		0.05	0.1	mg/L
M=CV SM4500-P-B,F(331V3)C																				
Total Phosphorus	0.079		0.005	0.01	mg/L	0.092		0.005	0.01	mg/L	0.225		0.005	0.01	mg/L	0.121		0.005	0.01	mg/L
M=CV SM4500-P-F (330V4)																				
Orthophosphate Phosphorus	0.0334		0.002	0.005	mg/L	0.0463		0.002	0.005	mg/L	0.0499		0.002	0.005	mg/L	0.0358		0.002	0.005	mg/L
M=ES NONE																				
Conductivity, Field	104		0.5	10	umhos/cm	85.6		0.5	10	umhos/cm	123		0.5	10	umhos/cm	76.4		0.5	10	umhos/cm
Discharge Rate of Stream	1.2		0.05	0.1	cfs	0.9		0.05	0.1	cfs	0.5		0.05	0.1	cfs	1.2		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	95				%	90.4				%	92.7				%	99.3				%
Dissolved Oxygen, Field	11.4		0.5	1	mg/L	10.4		0.5	1	mg/L	10.9		0.5	1	mg/L	11.9		0.5	1	mg/L
Field Personnel	JP				none	JP				none	JP				none	JP				none
pH, Field	7.54				pH	7.32				pH	7.49				pH	7.41				pH
Sample Function																				
Sample Information																				
Sample Temperature, Field	7.1				deg C	8.7				deg C	7.6				deg C	6.9				deg C
Turbidity, Field	38.4		0.5	2	NTU	15.4		0.5	2	NTU	96.1		0.5	2	NTU	39.2		0.5	2	NTU
M=MC SM 9213D 20TH (SOP 522V0)																				
Escherichia coli	660				CFU/100ml	2600				CFU/100ml	5900				CFU/100ml	790				CFU/100m
M=MC SM 9222D 20TH (SOP 506V1)																				
Fecal Coliform	680				CFU/100ml	2600				CFU/100ml	6500				CFU/100ml	510				CFU/100m
M=MT EPA 200.8*SW846 6020A																				
Chromium, Dissolved, ICP-MS	0.67	<RDL	0.2	1	ug/L	0.76	<RDL	0.2	1	ug/L	1.76		0.2	1	ug/L	3.9		0.2	1	ug/L
Chromium, Total, ICP-MS																				
Copper, Dissolved, ICP-MS	1.9	<RDL	0.4	2	ug/L	4.77		0.4	2	ug/L	2.41		0.4	2	ug/L	5.81		0.4	2	ug/L
Copper, Total, ICP-MS																				
Lead, Dissolved, ICP-MS	0.156		0.075	0.1	ug/L	0.244		0.075	0.1	ug/L	0.139		0.075	0.1	ug/L	0.107		0.075	0.1	ug/L
Lead, Total, ICP-MS																				
Zinc, Dissolved, ICP-MS	3.02		0.5	2.5	ug/L	40.1		0.5	2.5	ug/L	2	<RDL	0.5	2.5	ug/L	10.9		0.5	2.5	ug/L
Zinc, Total, ICP-MS																				
M=OR EPA 3520C/8270C (7-3-04-001)																				
Chlorpyrifos		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L
Diazinon		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L
Disulfoton		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL06					Locator:	MERCERISL10					Locator:	MERCERISL26					Locator:	MERCERISL32				
Descrip:	R/D FACILITY SOUTH					Descrip:	SE 22ND ST, NEAR M					Descrip:	FOREST AVE. AND 84					Descrip:	CREEK NEAR HOLLYHI				
Sampled:	12/12/08 2:18:00 PM					Sampled:	12/12/08 3:05:00 PM					Sampled:	12/12/08 12:06:00 PM					Sampled:	12/12/08 12:47:00 PM				
TimeSpan:						TimeSpan:						TimeSpan:						TimeSpan:					
Lab ID:	L45813-1					Lab ID:	L45813-2					Lab ID:	L45813-3					Lab ID:	L45813-4				
Matrix:	STORM WTR					Matrix:	STORM WTR					Matrix:	STORM WTR					Matrix:	STORM WTR				
% Solids:						% Solids:						% Solids:						% Solids:					
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
		-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis			
COMBINED LABS																				
Malathion		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L
Parathion-Ethyl		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L
Parathion-Methyl		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L
Phorate		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L
M=OR EPA1664A(703-19-D)																				
SGT-Hem (oil, nonpolar)		<MDL	2	5	mg/L		<MDL	2	5	mg/L		<MDL	2	5	mg/L		<MDL	2	5	mg/L
M=OR SW846 3535A*SW846 8151A																				
2,4,5-T		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L
2,4,5-TP (Silvex)		<MDL	0.039	0.2	ug/L		<MDL	0.039	0.2	ug/L		<MDL	0.039	0.2	ug/L		<MDL	0.039	0.2	ug/L
2,4-D		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L
2,4-DB		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L
Dalapon		<MDL	0.08	0.4	ug/L		<MDL	0.08	0.4	ug/L		<MDL	0.08	0.4	ug/L		<MDL	0.08	0.4	ug/L
Dicamba		<MDL	0.034	0.2	ug/L		<MDL	0.034	0.2	ug/L		<MDL	0.034	0.2	ug/L		<MDL	0.034	0.2	ug/L
Dichloroprop		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L
Dinoseb		<MDL	0.027	0.2	ug/L		<MDL	0.027	0.2	ug/L		<MDL	0.027	0.2	ug/L		<MDL	0.027	0.2	ug/L
MCPA		<MDL	0.028	0.2	ug/L		<MDL	0.028	0.2	ug/L		<MDL	0.028	0.2	ug/L		<MDL	0.028	0.2	ug/L
MCPP		<MDL	0.018	0.2	ug/L		<MDL	0.018	0.2	ug/L		<MDL	0.018	0.2	ug/L		<MDL	0.018	0.2	ug/L

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL42					MERCERISL06					ATMOSBLANK					FFBLANK				
Descrip:	E. MERCER WAY					R/D FACILITY SOUTH					ATMOSPHERE BLANK					FIELD FILTER BLANK				
Sampled:	12/12/08 1:20:00 PM					12/12/08 2:24:00 PM					12/12/08 12:04:00 PM					12/12/08 12:03:00 PM				
TimeSpan:																				
Lab ID:	L45813-5					L45813-6					L45813-7					L45813-8				
Matrix:	STORM WTR					STORM WTR					BLANK WTR					FILTER WTR				
% Solids:																				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
	-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis				
COMBINED LABS																				
M=CV SM2130-B																				
Turbidity						13.1		0.2	0.5	NTU										
M=CV SM2510-B (302V4)																				
Conductivity						113		1	5	umhos/cm										
M=CV SM2540-D (309V3)																				
Total Suspended Solids	103		2.5	5	mg/L	18.9		0.6	1.1	mg/L										
M=CV SM4500-H-B																				
pH						7.11	H			pH										
M=CV SM4500-N-C (331V3)C																				
Total Nitrogen	1.01		0.05	0.1	mg/L	0.548		0.05	0.1	mg/L										
M=CV SM4500-P-B,F(331V3)C																				
Total Phosphorus	0.198		0.005	0.01	mg/L	0.0776		0.005	0.01	mg/L										
M=CV SM4500-P-F (330V4)																				
Orthophosphate Phosphorus	0.0762		0.002	0.005	mg/L	0.0348		0.002	0.005	mg/L										
M=ES NONE																				
Conductivity, Field	110		0.5	10	umhos/cm	105		0.5	10	umhos/cm										
Discharge Rate of Stream	0.9		0.05	0.1	cfs	1.2		0.05	0.1	cfs										
Dissolved Oxygen Saturation, Field	94.9				%	95.3				%										
Dissolved Oxygen, Field	11.4		0.5	1	mg/L	11.4		0.5	1	mg/L										
Field Personnel	JP				none	JP				none										
pH, Field	7.42				pH	7.54				pH										
Sample Function						FREP@L45813-1				none										
Sample Information																Metals Field Filter Blank				none
Sample Temperature, Field	6.8				deg C	7.1				deg C										
Turbidity, Field	60.8		0.5	2	NTU	35.9		0.5	2	NTU										
M=MC SM 9213D 20TH (SOP 522V0)																				
Escherichia coli	1000				CFU/100ml	550				CFU/100ml										
M=MC SM 9222D 20TH (SOP 506V1)																				
Fecal Coliform	580	C			CFU/100ml	620				CFU/100ml										
M=MT EPA 200.8*SW846 6020A																				
Chromium, Dissolved, ICP-MS	0.97	<RDL	0.2	1	ug/L	0.67	<RDL	0.2	1	ug/L							<MDL	0.2	1	ug/L
Chromium, Total, ICP-MS												<MDL	0.2	1	ug/L					
Copper, Dissolved, ICP-MS	2.44		0.4	2	ug/L	1.9	<RDL	0.4	2	ug/L							<MDL	0.4	2	ug/L
Copper, Total, ICP-MS												<MDL	0.4	2	ug/L					
Lead, Dissolved, ICP-MS	0.181		0.075	0.1	ug/L	0.148		0.075	0.1	ug/L							<MDL	0.075	0.1	ug/L
Lead, Total, ICP-MS												<MDL	0.075	0.1	ug/L					
Zinc, Dissolved, ICP-MS	2	<RDL	0.5	2.5	ug/L	2.97		0.5	2.5	ug/L							<MDL	0.5	2.5	ug/L
Zinc, Total, ICP-MS												<MDL	0.5	2.5	ug/L					
M=OR EPA 3520C/8270C (7-3-04-001)																				
Chlorpyrifos		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L										
Diazinon		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L										
Disulfoton		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L										

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL42	MERCERISL06	ATMOSBLANK	FFBLANK
Descrip:	E. MERCER WAY	R/D FACILITY SOUTH	ATMOSPHERE BLANK	FIELD FILTER BLANK
Sampled:	12/12/08 1:20:00 PM	12/12/08 2:24:00 PM	12/12/08 12:04:00 PM	12/12/08 12:03:00 PM
TimeSpan:				
Lab ID:	L45813-5	L45813-6	L45813-7	L45813-8
Matrix:	STORM WTR	STORM WTR	BLANK WTR	FILTER WTR
% Solids:				

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
		-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis			
COMBINED LABS																				
Malathion		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L										
Parathion-Ethyl		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L										
Parathion-Methyl		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L										
Phorate		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L										
M=OR EPA1664A(703-19-D)																				
SGT-Hem (oil, nonpolar)		<MDL	2	5	mg/L		<MDL	2	5	mg/L										
M=OR SW846 3535A*SW846 8151A																				
2,4,5-T		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L										
2,4,5-TP (Silvex)		<MDL	0.039	0.2	ug/L		<MDL	0.039	0.2	ug/L										
2,4-D		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L										
2,4-DB		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L										
Dalapon		<MDL	0.08	0.4	ug/L		<MDL	0.08	0.4	ug/L										
Dicamba		<MDL	0.034	0.2	ug/L		<MDL	0.034	0.2	ug/L										
Dichloroprop		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L										
Dinoseb		<MDL	0.027	0.2	ug/L		<MDL	0.027	0.2	ug/L										
MCPA		<MDL	0.028	0.2	ug/L		<MDL	0.028	0.2	ug/L										
MCPP		<MDL	0.018	0.2	ug/L		<MDL	0.018	0.2	ug/L										

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator: FFBLANK
Descrip: FIELD FILTER BLANK
Sampled: 12/12/08 12:00:00 PM
TimeSpan:
Lab ID: L45813-9
Matrix: BLANK WTR
% Solids:

Parameters	Value	Qual	MDL	RDL	Units
		-Wet Weight Basis			
COMBINED LABS					
M=CV SM2130-B					
Turbidity					
M=CV SM2510-B (302V4)					
Conductivity					
M=CV SM2540-D (309V3)					
Total Suspended Solids					
M=CV SM4500-H-B					
pH					
M=CV SM4500-N-C (331V3)C					
Total Nitrogen					
M=CV SM4500-P-B,F(331V3)C					
Total Phosphorus					
M=CV SM4500-P-F (330V4)					
Orthophosphate Phosphorus		<MDL	0.002	0.005	mg/L
M=ES NONE					
Conductivity, Field					
Discharge Rate of Stream					
Dissolved Oxygen Saturation, Field					
Dissolved Oxygen, Field					
Field Personnel					
pH, Field					
Sample Function					
Sample Information	OrthoP Field Filter Blank				none
Sample Temperature, Field					
Turbidity, Field					
M=MC SM 9213D 20TH (SOP 522V0)					
Escherichia coli					
M=MC SM 9222D 20TH (SOP 506V1)					
Fecal Coliform					
M=MT EPA 200.8*SW846 6020A					
Chromium, Dissolved, ICP-MS					
Chromium, Total, ICP-MS					
Copper, Dissolved, ICP-MS					
Copper, Total, ICP-MS					
Lead, Dissolved, ICP-MS					
Lead, Total, ICP-MS					
Zinc, Dissolved, ICP-MS					
Zinc, Total, ICP-MS					
M=OR EPA 3520C/8270C (7-3-04-001)					
Chlorpyrifos					
Diazinon					
Disulfoton					

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator: FFBLANK
Descrip: FIELD FILTER BLANK
Sampled: 12/12/08 12:00:00 PM
TimeSpan:
Lab ID: L45813-9
Matrix: BLANK WTR
% Solids:

Parameters	Value	Qual	MDL	RDL	Units
		-Wet Weight Basis			
COMBINED LABS					
Malathion					
Parathion-Ethyl					
Parathion-Methyl					
Phorate					
M=OR EPA1664A(703-19-D)					
SGT-Hem (oil, nonpolar)					
M=OR SW846 3535A*SW846 8151A					
2,4,5-T					
2,4,5-TP (Silvex)					
2,4-D					
2,4-DB					
Dalapon					
Dicamba					
Dichloroprop					
Dinoseb					
MCPA					
MCPP					

PROJECT: 421195CY

King County Environmental Lab Matrix Report

COMBINED LABS-Liquid

Locator	Sample Depth	Lab ID	Conductivity umhos/cm	Orthophosphate Phosphorus mg/L	Total Nitrogen mg/L	Total Phosphorus mg/L	Total Suspended Solids mg/L	Turbidity NTU	pH pH	Escherichia coli CFU/100ml	Fecal Coliform CFU/100ml	Chromium, Dissolved, ICP-MS ug/L	Copper, Dissolved, ICP-MS ug/L	Lead, Dissolved, ICP-MS ug/L	Zinc, Dissolved, ICP-MS ug/L	Conductivity, Field umhos/cm	Discharge Rate of Stream cfs	Dissolved Oxygen Saturation, Field %	Dissolved Oxygen, Field mg/L	Sample Temperature, Field deg C	Turbidity, Field NTU	pH, Field pH
MERCERISL06		L45813-1		0.0334	0.553	0.079	20.4			660	680	0.67	1.9	0.156	3.02	104	1.2	95	11.4	7.1	38.4	7.54
MERCERISL10		L45813-2		0.0463	0.63	0.092	61.3			2600	2600	0.76	4.77	0.244	40.1	85.6	0.9	90.4	10.4	8.7	15.4	7.32
MERCERISL26		L45813-3		0.0499	1.25	0.225	31.1			5900	6500	1.76	2.41	0.139	2	123	0.5	92.7	10.9	7.6	96.1	7.49
MERCERISL32		L45813-4		0.0358	0.995	0.121	33			790	510	3.9	5.81	0.107	10.9	76.4	1.2	99.3	11.9	6.9	39.2	7.41
MERCERISL42		L45813-5		0.0762	1.01	0.198	103			1000	580	0.97	2.44	0.181	2	110	0.9	94.9	11.4	6.8	60.8	7.42
MERCERISL06		L45813-6	113	0.0348	0.548	0.0776	18.9	13.1	7.11	550	620	0.67	1.9	0.148	2.97	105	1.2	95.3	11.4	7.1	35.9	7.54

KING COUNTY ENVIRONMENTAL LABORATORY

Analytical Text Value Report

JAN 26 2009, 11:41

PROJECT:421195CY

SAMPLENUM	PARM NAME	TEXT VALUE
L45813-1	Field Personnel	JP
L45813-1	SGT-Hem (oil, nonpolar)	970 mL
L45813-2	Field Personnel	JP
L45813-2	SGT-Hem (oil, nonpolar)	890 mL
L45813-3	Field Personnel	JP
L45813-3	SGT-Hem (oil, nonpolar)	910 mL
L45813-4	Field Personnel	JP
L45813-4	SGT-Hem (oil, nonpolar)	960 mL
L45813-5	Field Personnel	JP
L45813-5	SGT-Hem (oil, nonpolar)	930 mL
L45813-6	Field Personnel	JP
L45813-6	pH	Sample analyzed past the 15 minute holding time.
L45813-6	Sample Function	FREP@L45813-1
L45813-6	SGT-Hem (oil, nonpolar)	920 mL
L45813-8	Sample Information	Metals Field Filter Blank
L45813-9	Sample Information	OrthoP Field Filter Blank

ESS Field Observations - WG

Date: 12/12/2008

Reported By: J. Power

Sample #(s): L45813 1-9

Project Name: Mercer Island Storm

Project Number: 421195

Field Personnel: JP

Weather during sampling run: Very stormy, with rain and wind. Temps in mid 40s. About .25" of rain fell during sampling event, with a 6 hour total of .31" for Renton Airport starting around 9 am. Wind gusts to 30 MPH near end of event.

Recent weather or conditions that may have an affect on water quality/quantity:
Mostly dry over past week.

Specific observations that may affect results:

Other observations:

- most streams up from base levels and turbid.
- All streams took a minimum of 3 orthoP filters, with a max of 5 filters.
- Less than 500 mls filtered for dissolved metals for most samples, as filters clogged and ran very slowly after about 300 mls.
- Rain began falling around 9 am, and continued through most of sampling run for a total of .31" by 3:30 pm
- Small "roads" accessing first three sites slippery with wet leaves
- Lock at Mercer06 was difficult to open. Stream only accessible via "trail" around east end of retention pond. FREP done here. D.O.T. had removed some sediment from settling pond, but not too recently.

Login Number: P45813

WLRD-MERCER ISLAND WQ STORM MONITORING

Project Number: 421195CY

Personnel: J. POWER

Sample No. (Type)	P45813-1	P45813-2	P45813-3
Locator	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	
Locator Desc.	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time	12-DEC-08/1418	/1505	/1206
End Date/Time			
Time Span			
Sample Depth			UPT TURBID RAINING
Comments	Need DOT Key ARER	North Island	84th Ave-Weyburn-West Island
COND, FIELD	103.8	85.6	122.5
DO SAT, FIELD	95.0	90.4	92.7
DO, FIELD	11.36	10.36	~~11.~~ 10.93
PERSONNEL	JP	→	→
PH, FIELD	7.54	7.32	7.49
SAMP TEMP	7.11	8.73	7.64
STRM FLOW	1.2 CFS	0.9 CFS	0.5 CFS SWORRM
TURB, FIELD	38.4	15.4	96.1
Dept., Matrix, Prod	3 FILTERS	3 FILTERS	5 ORTHOP FILTERS
	3 STORM WTR ORTHOP	3 STORM WTR ORTHOP	3 STORM WTR ORTHOP
	3 STORM WTR TOTN	3 STORM WTR TOTN	3 STORM WTR TOTN
	3 STORM WTR TOTP	3 STORM WTR TOTP	3 STORM WTR TOTP
	3 STORM WTR TSS	3 STORM WTR TSS	3 STORM WTR TSS
	5 STORM WTR EC-MF	5 STORM WTR EC-MF	5 STORM WTR EC-MF
	5 STORM WTR FC-MF	5 STORM WTR FC-MF	5 STORM WTR FC-MF
	6 STORM WTR CR-ICPMS, DISS	6 STORM WTR CR-ICPMS, DISS	6 STORM WTR CR-ICPMS, DISS
	6 STORM WTR CU-ICPMS, DISS	6 STORM WTR CU-ICPMS, DISS	6 STORM WTR CU-ICPMS, DISS

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
J. Power	12/12/08	1553
RECEIVED BY	**Date**	**Time**
[illegible]	12-12-08	1555
Sample Number(s)		
L45813 1-9		(All)

Initial / Date

S. Plan: _____ _____

Login #: L _____ _____

WKGP #: WG 99961 12/12

Entser #: R131346

Approved by: _____

Moved by: _____

continue ...

Login Number: P45813

WLRD-MERCER ISLAND WQ STORM MONITORING

Project Number: 421195CY

Personnel: _____

Sample No. (Type)	P45813-4	P45813-5	P45813-6
Locator	MERCERISL32	MERCERISL42	MERCERISL06
Short Loc. Desc.			MERCER06
Locator Desc.			R/D FACILITY SOUTH OF I-90
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time	12-DEC 08/1247	/1320	/1424
End Date/Time			
Time Span			
Sample Depth			
Comments	Holly Hill Dr-West Island	Retention Stucture-East Island	Field Rep
COND, FIELD	76.4	110.1	104.9
DO SAT, FIELD	99.3	~~110.1~~ 94.9	95.3
DO, FIELD	11.93	11.40	11.35
PERSONNEL	JP	→	→
PH, FIELD	7.41	7.42	7.54
SAMP TEMP	6.88	6.78	7.09
STRM FLOW	1.2 CFS SWOFFER	0.9 CFS	1.2 CFS
TURB, FIELD	39.2	60.8	35.9
SAMP FUNC	**********	**********	FREE L 45813-1
Dept., Matrix, Prod	4 FILTERS	4 FILTERS	3 FILTERS
	3 STORM WTR ORTHOP	3 STORM WTR ORTHOP	3 STORM WTR COND
	3 STORM WTR TOTN	3 STORM WTR TOTN	3 STORM WTR ORTHOP
	3 STORM WTR TOTP	3 STORM WTR TOTP	3 STORM WTR PH
	3 STORM WTR TSS	3 STORM WTR TSS	3 STORM WTR TOTN
	5 STORM WTR EC-MF	5 STORM WTR EC-MF	3 STORM WTR TOTP
	5 STORM WTR FC-MF	5 STORM WTR FC-MF	3 STORM WTR TSS

continue ...

Login Number: P45813

WLRD-MERCER ISLAND WQ STORM MONITORING

Project Number: 421195CY

Personnel:

Sample No. (Type)	P45813-7(ATB)	P45813-8(FFB)	P45813-9(FFB)
Locator	ATMOSBLANK	FFBLANK	FFBLANK
Short Loc. Desc.	ATMOSBLANK	FFBLAN K	FFBLAN K
Locator Desc.	ATMOSPHERE BLANK	FIELD FILTER BLANK	FIELD FILTER BLANK
Site	METRO	METRO	METRO
Start Date/Time	12-DEC-08/1204	/1203	/1200
End Date/Time			
Time Span			
Sample Depth			
Comments	field blank (metals)	Field filter blank Metals	Field filter blank OrthoP
SAMP INFO	**********		
Dept., Matrix, Prod			
	6 BLANK WTR CR-ICPMS	6 BLANK WTR CR-ICPMS, DISS	3 BLANK WTR ORTHOP
	6 BLANK WTR CU-ICPMS	6 BLANK WTR CU-ICPMS, DISS	
	6 BLANK WTR PB-ICPMS	6 BLANK WTR PB-ICPMS, DISS	
	6 BLANK WTR ZN-ICPMS	6 BLANK WTR ZN-ICPMS, DISS	

AT MERCEMSL026

18100

End of Fieldsheet.

LIMSView Batch Report - run on 01/26/09, 12:00 pm

WG100080 (Conductivity)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-6	421195CY	STORM WTR	12/12/2008 14:24	12/31/2008 11:23	12/31/2008 11:23	WG100080-1, -2, -3	FREP@L45813-1
L46865-1	421195CI2	FRESH WTR	12/30/2008 14:18	12/31/2008 11:20	12/31/2008 11:20	WG100080-1, -2, -3	
L46865-2	421195CI2	FRESH WTR	12/30/2008 13:57	12/31/2008 11:21	12/31/2008 11:21	WG100080-1, -2, -3	
L46865-3	421195CI2	FRESH WTR	12/30/2008 14:33	12/31/2008 11:21	12/31/2008 11:21	WG100080-1, -2, -3	
WG100080-1	LCS	BLANK WTR		12/31/2008 11:18	12/31/2008 11:18	WG100080-1, -2, -3	LEVEL1
WG100080-2	LD	FRESH WTR		12/31/2008 11:22	12/31/2008 11:22	WG100080-1, -2, -3	L46865-3
WG100080-3	LD	STORM WTR		12/31/2008 11:23	12/31/2008 11:23	WG100080-1, -2, -3	L45813-6

WG100025 (Orthophosphorus)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-1	421195CY	STORM WTR	12/12/2008 14:18	12-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	
L45813-2	421195CY	STORM WTR	12/12/2008 15:05	12-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	
L45813-3	421195CY	STORM WTR	12/12/2008 12:06	12-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	
L45813-4	421195CY	STORM WTR	12/12/2008 12:47	12-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	
L45813-5	421195CY	STORM WTR	12/12/2008 13:20	12-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	
L45813-6	421195CY	STORM WTR	12/12/2008 14:24	12-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	FREP@L45813-1
L45813-9	421195CY	BLANK WTR	12/12/2008 12:00	12-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	
L46977-1	421195CS	FRESH WTR	12/16/2008 11:00	16-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	
L46977-2	421195CS	FRESH WTR	12/16/2008 11:25	16-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	
L46977-5	421195CS	BLANK WTR	12/16/2008 10:45	16-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	
L47143-1	421195CS	STORM WTR	12/12/2008 19:58	17-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	
L47143-2	421195CS	STORM WTR	12/12/2008 16:30	17-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	
L47143-5	421195CS	BLANK WTR	12/17/2008 0:00	17-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	
WG100025-1	MB	BLANK WTR		17-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	MB1 081217
WG100025-2	SB	BLANK WTR		17-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	WG100025-1
WG100025-3	LCS	BLANK WTR		17-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	LEVEL1
WG100025-4	LD	FRESH WTR		16-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	L46977-1
WG100025-5	MS	FRESH WTR		16-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	L46977-1
WG100025-6	LD	STORM WTR		12-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	L45813-3
WG100025-7	MS	STORM WTR		12-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	L45813-3
WG100025-8	MB	BLANK WTR		17-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	MB8 081217
WG100025-9	SB	BLANK WTR		17-Dec-08	17-Dec-08	WG100025-9	WG100025-8
WG100025-10	LCS	BLANK WTR		17-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	LEVEL1
WG100025-11	LD	STORM WTR		17-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	L47143-1
WG100025-12	MS	STORM WTR		17-Dec-08	17-Dec-08	WG100025-1, -2, -3, -4, -5, -6, -7, -8, -10, -11, -12, -9	L47143-1

WG100143 (pH)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-6	421195CY	STORM WTR	12/12/2008 14:24	12/12/2008 16:55	12/12/2008 16:55	WG100143-1, -2	FREP@L45813-1
WG100143-1	LCS	BLANK WTR		12/12/2008 14:52	12/12/2008 14:52	WG100143-1, -2	LEVEL1
WG100143-2	LD	STORM WTR		12/12/2008 16:58	12/12/2008 16:58	WG100143-1, -2	L45813-6

WG100046 (Total Nutrients)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47148-5	421176	BLANK WTR	12/19/2008 0:00	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	
L45813-1	421195CY	STORM WTR	12/12/2008 14:18	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	
L45813-2	421195CY	STORM WTR	12/12/2008 15:05	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	
L45813-3	421195CY	STORM WTR	12/12/2008 12:06	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	
L45813-4	421195CY	STORM WTR	12/12/2008 12:47	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	
L45813-5	421195CY	STORM WTR	12/12/2008 13:20	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	
L45813-6	421195CY	STORM WTR	12/12/2008 14:24	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	FREP@L45813-1
L46957-1	421195CV	STORM WTR	12/7/2008 5:39	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	
L46957-2	421195CV	STORM WTR	12/7/2008 9:20	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	
L46957-3	421195CV	STORM WTR	12/7/2008 8:16	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	
L46957-4	421195CV	STORM WTR	12/7/2008 13:50	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	
L46977-1	421195CS	FRESH WTR	12/16/2008 11:00	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -9, -8, -10, -11, -12, -13	
L46977-2	421195CS	FRESH WTR	12/16/2008 11:25	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -9, -8, -10, -11, -12, -13	
L47143-1	421195CS	STORM WTR	12/12/2008 19:58	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -9, -8, -10, -11, -12, -13	
L47143-2	421195CS	STORM WTR	12/12/2008 16:30	24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -9, -8, -10, -11, -12, -13	
WG100046-1	MB	BLANK WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	MB2 081224
WG100046-2	SB	BLANK WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	WG100046-1
WG100046-3	LCS	BLANK WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	LEVEL1
WG100046-4	LD	STORM WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	L45813-1
WG100046-5	MS	STORM WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	L45813-1
WG100046-6	LD	STORM WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	L46957-4
WG100046-7	MS	STORM WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	L46957-4
WG100046-8	LD	FRESH WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -9, -8, -10, -11, -12, -13	L46977-2
WG100046-9	MS	FRESH WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -9, -8, -10, -11, -12, -13	L46977-2
WG100046-10	LD	STORM WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -9, -8, -10, -11, -12, -13	L47143-1
WG100046-11	MS	STORM WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -9, -8, -10, -11, -12, -13	L47143-1
WG100046-12	LD	BLANK WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	L47148-5
WG100046-13	MS	BLANK WTR		24-Dec-08	26-Dec-08	WG100046-1, -2, -3, -4, -5, -6, -7, -12, -13	L47148-5

WG99968 (Total Suspended Solids)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-1	421195CY	STORM WTR	12/12/2008 14:18	15-Dec-08	15-Dec-08	WG99968-1, -2, -3	
L45813-2	421195CY	STORM WTR	12/12/2008 15:05	15-Dec-08	15-Dec-08	WG99968-1, -2, -3	
L45813-3	421195CY	STORM WTR	12/12/2008 12:06	15-Dec-08	15-Dec-08	WG99968-1, -2, -3	
L45813-4	421195CY	STORM WTR	12/12/2008 12:47	15-Dec-08	15-Dec-08	WG99968-1, -2, -3	
L45813-5	421195CY	STORM WTR	12/12/2008 13:20	15-Dec-08	15-Dec-08	WG99968-1, -2, -3	
L45813-6	421195CY	STORM WTR	12/12/2008 14:24	15-Dec-08	15-Dec-08	WG99968-1, -2, -3	FREP@L45813-1
WG99968-1	MB	BLANK WTR		15-Dec-08	15-Dec-08	WG99968-1, -2, -3	MB1 081215
WG99968-2	LCS	BLANK WTR		15-Dec-08	15-Dec-08	WG99968-1, -2, -3	LEVEL1
WG99968-3	LD	STORM WTR		15-Dec-08	15-Dec-08	WG99968-1, -2, -3	L45813-5

WG99971 (Turbidity)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-6	421195CY	STORM WTR	12/12/2008 14:24	12/12/2008 16:30	12/12/2008 16:30	WG99971-1, -2	FREP@L45813-1
WG99971-1	LCS	BLANK WTR		12/12/2008 16:29	12/12/2008 16:29	WG99971-1, -2	LEVEL1
WG99971-2	LD	STORM WTR		12/12/2008 16:31	12/12/2008 16:31	WG99971-1, -2	L45813-6

WG99961 (Field Measurements)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-1	421195CY	STORM WTR	12/12/2008 14:18			WG99961-1, -2, -3, -4	
L45813-1	421195CY	STORM WTR	12/12/2008 14:18			WG99961-1, -2, -3, -4	
L45813-2	421195CY	STORM WTR	12/12/2008 15:05			WG99961-1, -2, -3, -4	
L45813-2	421195CY	STORM WTR	12/12/2008 15:05			WG99961-1, -2, -3, -4	
L45813-3	421195CY	STORM WTR	12/12/2008 12:06			WG99961-1, -2, -3, -4	
L45813-3	421195CY	STORM WTR	12/12/2008 12:06			WG99961-1, -2, -3, -4	
L45813-4	421195CY	STORM WTR	12/12/2008 12:47			WG99961-1, -2, -3, -4	
L45813-4	421195CY	STORM WTR	12/12/2008 12:47			WG99961-1, -2, -3, -4	
L45813-5	421195CY	STORM WTR	12/12/2008 13:20			WG99961-1, -2, -3, -4	
L45813-5	421195CY	STORM WTR	12/12/2008 13:20			WG99961-1, -2, -3, -4	
L45813-6	421195CY	STORM WTR	12/12/2008 14:24			WG99961-1, -2, -3, -4	FREP@L45813-1
L45813-6	421195CY	STORM WTR	12/12/2008 14:24			WG99961-1, -2, -3, -4	FREP@L45813-1
L45813-8	421195CY	BLANK WTR	12/12/2008 12:03			WG99961-1, -2, -3, -4	
L45813-9	421195CY	BLANK WTR	12/12/2008 12:00			WG99961-1, -2, -3, -4	
WG99961-1	CS	BLANK WTR				WG99961-1, -2, -3, -4	RANGE1
WG99961-2	FREP	STORM WTR				WG99961-1, -2, -3, -4	L45813-1 RANGE1
WG99961-3	CS	BLANK WTR				WG99961-1, -2, -3, -4	RANGE1
WG99961-4	CS	BLANK WTR				WG99961-1, -2, -3, -4	RANGE1

WG99945 (E coli by microfiltration)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-1	421195CY	STORM WTR	12/12/2008 14:18		13-Dec-08	WG99946-4, -5, WG99945-1, -2, -3	
L45813-2	421195CY	STORM WTR	12/12/2008 15:05		13-Dec-08	WG99946-4, -5, WG99945-1, -2, -3	
L45813-3	421195CY	STORM WTR	12/12/2008 12:06		13-Dec-08	WG99946-4, -5, WG99945-1, -2, -3	
L45813-4	421195CY	STORM WTR	12/12/2008 12:47		13-Dec-08	WG99946-4, -5, WG99945-1, -2, -3	
L45813-5	421195CY	STORM WTR	12/12/2008 13:20		13-Dec-08	WG99946-4, -5, WG99945-1, -2, -3	
L45813-6	421195CY	STORM WTR	12/12/2008 14:24		13-Dec-08	WG99946-4, -5, WG99945-1, -2, -3	FREP@L45813-1
WG99945-1	LD	STORM WTR			13-Dec-08	WG99946-4, -5, WG99945-1, -2, -3	L45813-3
WG99945-2	PC	STORM WTR			13-Dec-08	WG99946-4, -5, WG99945-1, -2, -3	QC-PERFORMED:12-DEC-08
WG99945-3	NC	STORM WTR			13-Dec-08	WG99946-4, -5, WG99945-1, -2, -3	QC-PERFORMED:12-DEC-08
WG99946-4	BF	BLANK WTR			13-Dec-08		QC-PERFORMED:12-DEC-08
WG99946-5	AF	BLANK WTR			13-Dec-08		QC-PERFORMED:12-DEC-08

WG99946 (Fecal coliform by microfiltration)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-1	421195CY	STORM WTR	12/12/2008 14:18		13-Dec-08	WG99946-1, -2, -3, -4, -5	
L45813-2	421195CY	STORM WTR	12/12/2008 15:05		13-Dec-08	WG99946-1, -2, -3, -4, -5	
L45813-3	421195CY	STORM WTR	12/12/2008 12:06		13-Dec-08	WG99946-1, -2, -3, -4, -5	
L45813-4	421195CY	STORM WTR	12/12/2008 12:47		13-Dec-08	WG99946-1, -2, -3, -4, -5	
L45813-5	421195CY	STORM WTR	12/12/2008 13:20		13-Dec-08	WG99946-1, -2, -3, -4, -5	
L45813-6	421195CY	STORM WTR	12/12/2008 14:24		13-Dec-08	WG99946-1, -2, -3, -4, -5	FREP@L45813-1
WG99946-1	LD	STORM WTR			13-Dec-08	WG99946-1, -2, -3, -4, -5	L45813-3
WG99946-2	PC	BLANK WTR			13-Dec-08	WG99946-1, -2, -3, -4, -5	QC-PERFORMED:12-DEC-08
WG99946-3	NC	BLANK WTR			13-Dec-08	WG99946-1, -2, -3, -4, -5	QC-PERFORMED:12-DEC-08
WG99946-4	BF	BLANK WTR			13-Dec-08	WG99946-1, -2, -3, -4, -5	QC-PERFORMED:12-DEC-08
WG99946-5	AF	BLANK WTR			13-Dec-08	WG99946-1, -2, -3, -4, -5	QC-PERFORMED:12-DEC-08

WG99958 (Total Metals by ICPMS)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-7	421195CY	BLANK WTR	12/12/2008 12:04	15-Dec-08	16-Dec-08	WG99958-1, -2, -3, -4	
L47109-1	421183_FB	BLANK WTR	12/9/2008 15:50	15-Dec-08	16-Dec-08	WG99958-1, -2, -3, -4	FB@CARBOYHO703
L47110-1	421183_FB	BLANK WTR	12/9/2008 16:00	15-Dec-08	16-Dec-08	WG99958-1, -2, -3, -4	FB@L46920-8
L47111-1	421183_FB	BLANK WTR	12/9/2008 15:40	15-Dec-08	16-Dec-08	WG99958-1, -2, -3, -4	FB@L47034-8
WG99958-1	MB	BLANK WTR		15-Dec-08	16-Dec-08	WG99958-1, -2, -3, -4	METHOD BLANK
WG99958-2	SB	BLANK WTR		15-Dec-08	16-Dec-08	WG99958-1, -2, -3, -4	WG99958-1 MS-20 SPIKE BLANK
WG99958-3	LD	BLANK WTR		15-Dec-08	16-Dec-08	WG99958-1, -2, -3, -4	L47109-1 RPD-LIQ LAB DUP
WG99958-4	MS	BLANK WTR		15-Dec-08	16-Dec-08	WG99958-1, -2, -3, -4	L47109-1 MS-20 MAT SPK

WG99955 (Dissolved Metals by ICPMS)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-1	421195CY	STORM WTR	12/12/2008 14:18	15-Dec-08	16-Dec-08	WG99955-1, -2, -3, -4	
L45813-2	421195CY	STORM WTR	12/12/2008 15:05	15-Dec-08	16-Dec-08	WG99955-1, -2, -3, -4	
L45813-3	421195CY	STORM WTR	12/12/2008 12:06	15-Dec-08	16-Dec-08	WG99955-1, -2, -3, -4	
L45813-4	421195CY	STORM WTR	12/12/2008 12:47	15-Dec-08	16-Dec-08	WG99955-1, -2, -3, -4	
L45813-5	421195CY	STORM WTR	12/12/2008 13:20	15-Dec-08	16-Dec-08	WG99955-1, -2, -3, -4	
L45813-6	421195CY	STORM WTR	12/12/2008 14:24	15-Dec-08	16-Dec-08	WG99955-1, -2, -3, -4	FREP@L45813-1
L45813-8	421195CY	FILTER WTR	12/12/2008 12:03	15-Dec-08	16-Dec-08	WG99955-1, -2, -3, -4	
WG99955-1	MB	BLANK WTR		15-Dec-08	16-Dec-08	WG99955-1, -2, -3, -4	METHOD BLANK
WG99955-2	SB	BLANK WTR		15-Dec-08	16-Dec-08	WG99955-1, -2, -3, -4	WG99955-1 MS-20 SPIKE BLANK
WG99955-3	LD	STORM WTR		15-Dec-08	16-Dec-08	WG99955-1, -2, -3, -4	L45813-2 RPD-LIQ LAB DUP
WG99955-4	MS	STORM WTR		15-Dec-08	16-Dec-08	WG99955-1, -2, -3, -4	L45813-2 MS-20 MAT SPK

WG100316 (Chlorinated Herbicides, subcontract)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-1	421195CY	STORM WTR	12/12/2008 14:18	12/17/2008 16:40			
L45813-2	421195CY	STORM WTR	12/12/2008 15:05	12/17/2008 16:40			
L45813-3	421195CY	STORM WTR	12/12/2008 12:06	12/17/2008 16:40			
L45813-4	421195CY	STORM WTR	12/12/2008 12:47	12/17/2008 16:40			
L45813-5	421195CY	STORM WTR	12/12/2008 13:20	12/17/2008 16:40			
L45813-6	421195CY	STORM WTR	12/12/2008 14:24	12/17/2008 16:40			FREP@L45813-1

WG99960 (Organophosphorus Pesticides)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-1	421195CY	STORM WTR	12/12/2008 14:18	15-Dec-08	17-Dec-08	WG99960-1, -2, -3, -4	
L45813-2	421195CY	STORM WTR	12/12/2008 15:05	15-Dec-08	17-Dec-08	WG99960-1, -2, -3, -4	
L45813-3	421195CY	STORM WTR	12/12/2008 12:06	15-Dec-08	17-Dec-08	WG99960-1, -2, -3, -4	
L45813-4	421195CY	STORM WTR	12/12/2008 12:47	15-Dec-08	17-Dec-08	WG99960-1, -2, -3, -4	
L45813-5	421195CY	STORM WTR	12/12/2008 13:20	15-Dec-08	17-Dec-08	WG99960-1, -2, -3, -4	
L45813-6	421195CY	STORM WTR	12/12/2008 14:24	15-Dec-08	17-Dec-08	WG99960-1, -2, -3, -4	FREP@L45813-1
WG99960-1	MB	BLANK WTR		15-Dec-08	17-Dec-08	WG99960-1, -2, -3, -4	MB081215
WG99960-2	SB	BLANK WTR		15-Dec-08	17-Dec-08	WG99960-1, -2, -3, -4	WG99960-1
WG99960-3	MS	STORM WTR		15-Dec-08	17-Dec-08	WG99960-1, -2, -3, -4	L45813-3
WG99960-4	MSD	STORM WTR		15-Dec-08	17-Dec-08	WG99960-1, -2, -3, -4	WG99960-3 L45813-3

WG99995 (Oil, non polar)

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L45813-1	421195CY	STORM WTR	12/12/2008 14:18	17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	
L45813-2	421195CY	STORM WTR	12/12/2008 15:05	17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	
L45813-3	421195CY	STORM WTR	12/12/2008 12:06	17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	
L45813-4	421195CY	STORM WTR	12/12/2008 12:47	17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	
L45813-5	421195CY	STORM WTR	12/12/2008 13:20	17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	
L45813-6	421195CY	STORM WTR	12/12/2008 14:24	17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	FREP@L45813-1
L47060-1	421164	IW WTR	12/15/2008 10:36	17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	
L47060-2	421164	IW WTR	12/15/2008 10:41	17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	
L47060-3	421164	IW WTR	12/15/2008 10:46	17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	
WG99995-1	MB	BLANK WTR		17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	MB081217
WG99995-2	SB	BLANK WTR		17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	WG99995-1
WG99995-3	MS	IW WTR		17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	L47060-1
WG99995-4	LD	IW WTR		17-Dec-08	17-Dec-08	WG99995-1, -2, -3, -4	L45813-3

LIMSView Analytical QC Report - run on 01/26/09 12:00 pm

Workgroup: WG100080 (Conductivity)

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Conductivity	1	5	umhos/cm	73.9	77.5	105		90--110

(Lab Duplicate) L46865-3

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Conductivity	1	5	umhos/cm	154	153	0		10

(Lab Duplicate) L45813-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Conductivity	1	5	umhos/cm	113	111	1		10

Workgroup: WG100025 (Orthophosphorus)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	0.04	0.0391	98		80--120

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.04	0.0406	101		85--115

(Lab Duplicate) L46977-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.00541	0.00514	5		20

(Matrix Spike) L46977-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.00541	0.04	0.045	99		75--125

(Lab Duplicate) L45813-3

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.0499	0.0503	1		20

(Matrix Spike) L45813-3

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.0499	0.04	0.0892	98		75--125

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	0.04	0.0383	96		80--120

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.04	0.0387	97		85--115

(Lab Duplicate) L47143-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.00812	0.00823	1		20

(Matrix Spike) L47143-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.00812	0.04	0.0408	82		75--125

Workgroup: WG100143 (pH)

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
pH			pH	6.86	6.9	101		98--102

(Lab Duplicate) L45813-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
pH			pH	7.11	7.16	0.05		0.2

Workgroup: WG100046 (Total Nutrients)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Nitrogen	0.05	0.1	mg/L	<MDL	

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Phosphorus	0.005	0.01	mg/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	<MDL	0.1	0.0999	100		80--120

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	<MDL	1	0.977	98		80--120

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	1	0.944	94		85--115

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.1	0.0976	98		85--115

(Lab Duplicate) L45813-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	0.553	0.557	1		20

(Lab Duplicate) L45813-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.079	0.0797	1		20

(Matrix Spike) L45813-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.079	0.1	0.175	96		75--125

(Matrix Spike) L45813-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	0.553	1	1.53	97		75--125

(Lab Duplicate) L46957-4

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	0.568	0.574	1		20

(Lab Duplicate) L46957-4

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.0408	0.0418	3		20

(Matrix Spike) L46957-4

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.0408	0.1	0.142	102		75--125

(Matrix Spike) L46957-4

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	0.568	1	1.56	99		75--125

(Lab Duplicate) L46977-2

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.0361	0.0298	19		20

(Matrix Spike) L46977-2

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.0361	0.1	0.133	97		75--125

(Lab Duplicate) L47143-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.0533	0.061	13		20

(Matrix Spike) L47143-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	0.0533	0.1	0.157	104		75--125

(Lab Duplicate) L47148-5

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	<MDL	<MDL			20

(Lab Duplicate) L47148-5

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	<MDL	<MDL			20

(Matrix Spike) L47148-5

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Nitrogen	0.05	0.1	mg/L	<MDL	1	0.965	96		75--125

(Matrix Spike) L47148-5

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Total Phosphorus	0.005	0.01	mg/L	<MDL	0.1	0.1	100		75--125

Workgroup: WG99968 (Total Suspended Solids)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Total Suspended Solids	5	10	mg/L	100	87	87		80--120

(Lab Duplicate) L45813-5

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Total Suspended Solids	2.5	5	mg/L	103	89.5	14		25

Workgroup: WG99971 (Turbidity)

(Lab Control Sample)

Parameter	MDL	RDL	Units	TrueValue	LCS Value	% Rec.	Qual	LabLimit
Turbidity	0.2	0.5	NTU	10	10.1	101		90--110

(Lab Duplicate) L45813-6

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Turbidity	0.2	0.5	NTU	13.1	13.1	0		25

Workgroup: WG99961 (Field Measurements)

(Check Standard)

Parameter	MDL	RDL	Units	TrueValue	CS Value	% Rec.	Qual	LabLimit
Conductivity, Field	0.5	10	umhos/cm	73.9	73.7	100		90--110
pH, Field			pH	6.86	6.83	0.03		0--.2

(Field Replicate) L45813-1

Parameter	MDL	RDL	Units	SampValue	FREP Value	RPD^	Qual	LabLimit
Conductivity, Field	0.5	10	umhos/cm	104	105	1		10
Dissolved Oxygen, Field	0.5	1	mg/L	11.4	11.4	0		20
Sample Temperature, Field			deg C	7.1	7.1	0.02		0.3
Turbidity, Field	0.5	2	NTU	38.4	35.9	7		20
pH, Field			pH	7.54	7.54	0		0.2

(Check Standard)

Parameter	MDL	RDL	Units	TrueValue	CS Value	% Rec.	Qual	LabLimit
Conductivity, Field	0.5	10	umhos/cm	73.9	73.9	100		90--110
pH, Field			pH	6.86	6.82	0.04		0--.2

(Check Standard)

Parameter	MDL	RDL	Units	TrueValue	CS Value	% Rec.	Qual	LabLimit
Conductivity, Field	0.5	10	umhos/cm	73.9	73.7	100		90--110
Dissolved Oxygen Saturation, Field			%	100	99.1	99		96--104
pH, Field			pH	6.86	6.92	0.06		0--.2

Workgroup: WG99945 (E. coli by microfiltration)

(Lab Duplicate) L45813-3

Parameter	MDL	RDL	Units	SampValue	LD Value	Rlog	P value	Qual
Escherichia coli			CFU/100ml	5900	5600	0.02	0.22	N3

(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Escherichia coli			CFU/100ml		PASS

(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Escherichia coli			CFU/100ml		PASS

(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

Workgroup: WG99946 (Fecal coliform by microfiltration)

(Lab Duplicate) L45813-3

Parameter	MDL	RDL	Units	SampValue	LD Value	Rlog	P value	Qual
Fecal Coliform			CFU/100ml	6500	4700	0.14	0.17	N3

(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

Workgroup: WG99958 (Total Metals by ICPMS)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	
Lead, Total, ICP-MS	0.075	0.1	ug/L	<MDL	
Molybdenum, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Selenium, Total, ICP-MS	1	1	ug/L	<MDL	
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.5	98		85--115
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19	95		85--115
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	19.4	97		85--115
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	20	20.7	104		85--115
Lead, Total, ICP-MS	0.075	0.1	ug/L	<MDL	20	18.9	95		85--115
Molybdenum, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.1	91		85--115
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.7	98		85--115
Selenium, Total, ICP-MS	1	1	ug/L	<MDL	20	20	100		85--115
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19	95		85--115
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	19.7	98		85--115

(Lab Duplicate) L47109-1

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	<MDL			20
Copper, Total, ICP-MS	0.4	2	ug/L	1.1	1.1			20
Lead, Total, ICP-MS	0.075	0.1	ug/L	2.46	2.44	1		20
Molybdenum, Total, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Nickel, Total, ICP-MS	0.1	0.5	ug/L	0.11	0.11			20
Selenium, Total, ICP-MS	1	1	ug/L	<MDL	<MDL			20
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Zinc, Total, ICP-MS	0.5	2.5	ug/L	1.8	1.7			20

(Matrix Spike) L47109-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.2	101		75--125
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20	100		75--125
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	19.9	99		75--125
Copper, Total, ICP-MS	0.4	2	ug/L	1.1	20	22.8	109		75--125
Lead, Total, ICP-MS	0.075	0.1	ug/L	2.46	20	22.5	100		75--125
Molybdenum, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.7	94		75--125
Nickel, Total, ICP-MS	0.1	0.5	ug/L	0.11	20	20.6	102		75--125
Selenium, Total, ICP-MS	1	1	ug/L	<MDL	20	21.1	105		75--125
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.5	98		75--125
Zinc, Total, ICP-MS	0.5	2.5	ug/L	1.8	20	22.5	103		75--125

Workgroup: WG99955 (Dissolved Metals by ICPMS)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	
Lead, Dissolved, ICP-MS	0.075	0.1	ug/L	<MDL	
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	20	19.7	99		85--115
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	20	21.3	106		85--115
Lead, Dissolved, ICP-MS	0.075	0.1	ug/L	<MDL	20	19.3	97		85--115
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	19.7	98		85--115

(Lab Duplicate) L45813-2

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	0.76	0.74			20
Copper, Dissolved, ICP-MS	0.4	2	ug/L	4.77	4.82	1		20
Lead, Dissolved, ICP-MS	0.075	0.1	ug/L	0.244	0.244	0		20
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	40.1	39.8	1		20

(Matrix Spike) L45813-2

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	0.76	20	19.3	93		75--125
Copper, Dissolved, ICP-MS	0.4	2	ug/L	4.77	20	24.3	98		75--125
Lead, Dissolved, ICP-MS	0.075	0.1	ug/L	0.244	20	19.4	96		75--125
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	40.1	20	59.1	95		75--125

Workgroup: WG100316 (Chlorinated Herbicides, subcontract)

SAMPLE SUMMARY

Client: King County Environmental Laboratory

Job Number: 580-12306-1
Sdg Number: Shipment # EL-08-48

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
580-12306-1	P45813-1	Water	12/12/2008 0000	12/16/2008 1200
580-12306-2	P45813-2	Water	12/12/2008 0000	12/16/2008 1200
580-12306-2MS	P45813-2	Water	12/12/2008 0000	12/16/2008 1200
580-12306-2MSD	P45813-2	Water	12/12/2008 0000	12/16/2008 1200
580-12306-3	P45813-3	Water	12/12/2008 0000	12/16/2008 1200
580-12306-4	P45813-4	Water	12/12/2008 0000	12/16/2008 1200
580-12306-5	P45813-5	Water	12/12/2008 0000	12/16/2008 1200
580-12306-6	P45813-6	Water	12/12/2008 0000	12/16/2008 1200

Client: King County Environmental Laboratory

Job Number: 580-12306-1
Sdg Number: Shipment # EL-08-48

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Analysis Batch:580-39278					
LCS 580-39284/2-A	Lab Control Spike	T	Water	8151A	580-39284
MB 580-39284/1-A	Method Blank	T	Water	8151A	580-39284
580-12306-1	P45813-1	T	Water	8151A	580-39284
580-12306-2	P45813-2	T	Water	8151A	580-39284
580-12306-2MS	Matrix Spike	T	Water	8151A	580-39284
580-12306-2MSD	Matrix Spike Duplicate	T	Water	8151A	580-39284
580-12306-3	P45813-3	T	Water	8151A	580-39284
580-12306-4	P45813-4	T	Water	8151A	580-39284
580-12306-5	P45813-5	T	Water	8151A	580-39284
580-12306-6	P45813-6	T	Water	8151A	580-39284
Prep Batch: 580-39284					
LCS 580-39284/2-A	Lab Control Spike	T	Water	8151A	
MB 580-39284/1-A	Method Blank	T	Water	8151A	
580-12306-1	P45813-1	T	Water	8151A	
580-12306-2	P45813-2	T	Water	8151A	
580-12306-2MS	Matrix Spike	T	Water	8151A	
580-12306-2MSD	Matrix Spike Duplicate	T	Water	8151A	
580-12306-3	P45813-3	T	Water	8151A	
580-12306-4	P45813-4	T	Water	8151A	
580-12306-5	P45813-5	T	Water	8151A	
580-12306-6	P45813-6	T	Water	8151A	

Report Basis
T = Total

Client: King County Environmental Laboratory

Job Number: 580-12306-1
Sdg Number: Shipment # EL-08-48

Method Blank - Batch: 580-39284

Method: 8151A
Preparation: 8151A

Lab Sample ID: MB 580-39284/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/18/2008 0156
Date Prepared: 12/17/2008 1640

Analysis Batch: 580-39278
Prep Batch: 580-39284
Units: ug/L

Instrument ID: TAC008
Lab File ID: L30369.d
Initial Weight/Volume: 125 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Result	Qual	MDL	RL
Dalapon	ND		0.080	0.40
Dicamba	ND		0.034	0.20
Mecoprop	ND		0.018	0.20
MCPA	ND		0.028	0.20
Dichlorprop	ND		0.035	0.20
2,4-D	ND		0.015	0.20
Silvex (2,4,5-TP)	ND		0.039	0.20
2,4,5-T	ND		0.035	0.20
Dinoseb	ND		0.027	0.20
2,4-DB	ND		0.019	0.20

Surrogate	% Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	90	40 - 135

Lab Control Spike - Batch: 580-39284

Method: 8151A
Preparation: 8151A

Lab Sample ID: LCS 580-39284/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/18/2008 0220
Date Prepared: 12/17/2008 1640

Analysis Batch: 580-39278
Prep Batch: 580-39284
Units: ug/L

Instrument ID: TAC008
Lab File ID: L30370.d
Initial Weight/Volume: 125 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dalapon	8.00	13.8	172	16 - 103	*
Dicamba	8.00	8.35	104	51 - 125	
Mecoprop	8.00	8.99	112	57 - 139	
MCPA	8.00	8.49	106	60 - 145	
Dichlorprop	8.00	8.79	110	70 - 120	
2,4-D	8.00	8.80	110	42 - 128	
Silvex (2,4,5-TP)	8.00	8.09	101	63 - 119	
2,4,5-T	8.00	7.90	99	35 - 110	
Dinoseb	8.00	7.39	92	17 - 153	
2,4-DB	8.00	7.70	96	35 - 115	

Surrogate	% Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	101	40 - 135

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: King County Environmental Laboratory

Job Number: 580-12306-1
Sdg Number: Shipment # EL-08-48

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 580-39284

Method: 8151A
Preparation: 8151A

MS Lab Sample ID:	580-12306-2	Analysis Batch: 580-39278	Instrument ID: TAC008
Client Matrix:	Water	Prep Batch: 580-39284	Lab File ID: L30373.d
Dilution:	1.0		Initial Weight/Volume: 125 mL
Date Analyzed:	12/18/2008 0333		Final Weight/Volume: 1 mL
Date Prepared:	12/17/2008 1640		Injection Volume: 1 uL

MSD Lab Sample ID:	580-12306-2	Analysis Batch: 580-39278	Instrument ID: TAC008
Client Matrix:	Water	Prep Batch: 580-39284	Lab File ID: L30374.d
Dilution:	1.0		Initial Weight/Volume: 125 mL
Date Analyzed:	12/18/2008 0357		Final Weight/Volume: 1 mL
Date Prepared:	12/17/2008 1640		Injection Volume: 1 uL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Dalapon	117	120	16 - 103	3	39	F	F
Dicamba	98	111	51 - 125	12	19		
Mecoprop	111	107	57 - 139	4	22		
MCPA	101	98	60 - 145	3	30		
Dichlorprop	86	106	70 - 120	20	30		
2,4-D	108	116	42 - 128	7	15		
Silvex (2,4,5-TP)	98	98	63 - 119	0	17		
2,4,5-T	104	97	35 - 110	7	30		
Dinoseb	113	21	17 - 153	136	33		F
2,4-DB	94	87	35 - 115	8	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	87	101	40 - 135

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: King County Environmental Laboratory

Job Number: 580-12306-1
Sdg Number: Shipment # EL-08-48

Matrix Spike/
Matrix Spike Duplicate Data Report - Batch: 580-39284

Method: 8151A
Preparation: 8151A

MS Lab Sample ID: 580-12306-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/18/2008 0333
Date Prepared: 12/17/2008 1640

Units: ug/L

MSD Lab Sample ID: 580-12306-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 12/18/2008 0357
Date Prepared: 12/17/2008 1640

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual		MSD Result/Qual	
Dalapon	ND	8.00	8.00	9.32	F	9.60	F
Dicamba	ND	8.00	8.00	7.87		8.85	
Mecoprop	ND	8.00	8.00	8.86		8.54	
MCPA	ND	8.00	8.00	8.06		7.86	
Dichlorprop	ND	8.00	8.00	6.91		8.47	
2,4-D	ND	8.00	8.00	8.62		9.26	
Silvex (2,4,5-TP)	ND	8.00	8.00	7.88		7.87	
2,4,5-T	ND	8.00	8.00	8.32		7.78	
Dinoseb	ND	8.00	8.00	9.00		1.70	F
2,4-DB	ND	8.00	8.00	7.53		6.96	

Calculations are performed before rounding to avoid round-off errors in calculated results.

Workgroup: WG99960 (Orthophosphorus Pesticides)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Chlorpyrifos	0.034	0.05	ug/L	<MDL	
Diazinon	0.043	0.05	ug/L	<MDL	
Disulfoton	0.027	0.05	ug/L	<MDL	
Malathion	0.048	0.05	ug/L	<MDL	
Parathion-Ethyl	0.045	0.05	ug/L	<MDL	
Parathion-Methyl	0.036	0.05	ug/L	<MDL	
Phorate	0.033	0.05	ug/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
Chlorpyrifos	0.034	0.05	ug/L	<MDL	0.25	0.217	87		55--147
Diazinon	0.043	0.05	ug/L	<MDL	0.25	0.24	96		63--129
Disulfoton	0.027	0.05	ug/L	<MDL	0.25	0.155	62		40--132
Malathion	0.048	0.05	ug/L	<MDL	0.25	0.18	72		62--152
Parathion-Ethyl	0.045	0.05	ug/L	<MDL	0.25	0.211	85		46--203
Parathion-Methyl	0.036	0.05	ug/L	<MDL	0.25	0.237	95		31--215
Phorate	0.033	0.05	ug/L	<MDL	0.25	0.131	52		49--126

(Matrix Spike Duplicate, Matrix Spike) L45813-3

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit	TrueValue	MSD Value	% Rec.	Qual	RPD	Qual	LabLimit
Chlorpyrifos	0.032	0.0472	ug/L	<MDL	0.236	0.212	90		55--147	0.236	0.232	98		9		15
Diazinon	0.041	0.0472	ug/L	<MDL	0.236	0.254	107		63--129	0.236	0.283	120		11		12
Disulfoton	0.025	0.0472	ug/L	<MDL	0.236	0.145	62		40--132	0.236	0.166	71		14		18
Malathion	0.045	0.0472	ug/L	<MDL	0.236	0.277	117		62--152	0.236	0.316	134		14		14
Parathion-Ethyl	0.042	0.0472	ug/L	<MDL	0.236	0.276	117		46--203	0.236	0.326	138		16		21
Parathion-Methyl	0.034	0.0472	ug/L	<MDL	0.236	0.299	127		31--215	0.236	0.332	141		10		25
Phorate	0.031	0.0472	ug/L	<MDL	0.236	0.14	59		49--126	0.236	0.161	68		14		15

Surrogate:	Chlorpyrifos-D10
(Lab Limits)	0--164
L45813-1	94
L45813-2	95
L45813-3	100
L45813-4	94
L45813-5	98
L45813-6	92
WG99960-1	77
WG99960-2	77
WG99960-3	85
WG99960-4	91

Workgroup: WG99995 (Oil, non polar)

(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
SGT-Hem (oil, nonpolar)	2	5	mg/L	<MDL	

(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	TrueValue	SB Value	% Rec.	Qual	LabLimit
SGT-Hem (oil, nonpolar)	2	5	mg/L	<MDL	20	14.5	73		64--132

(Matrix Spike) L47060-1

Parameter	MDL	RDL	Units	SampValue	TrueValue	MS Value	% Rec.	Qual	LabLimit
SGT-Hem (oil, nonpolar)	2	5	mg/L	17.6	21.5	36.9	90		64--132

(Lab Duplicate) L45813-3

Parameter	MDL	RDL	Units	SampValue	LD Value	RPD^	Qual	LabLimit
SGT-Hem (oil, nonpolar)	2	5	mg/L	<MDL	<MDL			34

^ For the following parameters, the values in RPD column are Absolute Difference:

pH
pH, Field
Salinity
Salinity, Field
sample Depth
sample Temperature, Field

King County

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April 20, 2009

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195CY
Mercer Island Stormwater Monitoring,
Samples L47164-1 to 9

Attached is the comprehensive report for the water samples collected and delivered to the laboratory on March 14, 1009. The samples were analyzed in the Organics, Metals, Microbiology and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:
There were no anomalies associated with the preparation and the analysis of these samples.

Metals:
There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:
There were no anomalies associated with the preparation and the analysis of these samples.

Organics:

Oil, Non-Polar Analysis:
There were no anomalies associated with the analysis of these samples.

Herbicide Analyses:
Herbicide analysis was subcontracted to TestAmerica Tacoma. There were no anomalies associated with the analysis of these samples.

Organophosphorus Pesticides (short list) Analyses:
There were no anomalies associated with the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

1202M

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL06	MERCERISL10	MERCERISL26
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	FOREST AVE. AND 84
Client Loc:			
Sampled:	03/14/09 12:08:00 PM	03/14/09 12:42:00 PM	03/14/09 9:34:00 AM
TimeSpan:			
Lab ID:	L47164-1	L47164-2	L47164-3
Matrix:	STORM WTR	STORM WTR	STORM WTR
% Solids:			

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis		
COMBINED LABS															
M=CV SM2540-D															
Total Suspended Solids	13.4		0.5	1	mg/L	6.9		0.5	1	mg/L	80.6		1.4	2.9	mg/L
M=CV SM4500-N-C															
Total Nitrogen	0.639		0.05	0.1	mg/L	0.679		0.05	0.1	mg/L	1.13		0.05	0.1	mg/L
M=CV SM4500-P-B,F															
Total Phosphorus	0.0608		0.005	0.01	mg/L	0.0717		0.005	0.01	mg/L	0.133		0.005	0.01	mg/L
M=CV SM4500-P-F															
Orthophosphate Phosphorus	0.033		0.002	0.005	mg/L	0.04		0.002	0.005	mg/L	0.0341		0.002	0.005	mg/L
M=ES NONE															
Conductivity, Field	128		0.5	10	umhos/cm	95		0.5	10	umhos/cm	148		0.5	10	umhos/cm
Discharge Rate of Stream	1.1		0.05	0.1	cfs	0.7		0.05	0.1	cfs	0.3		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	99.5				%	96.2				%	97.7				%
Dissolved Oxygen, Field	12.3		0.5	1	mg/L	11.4		0.5	1	mg/L	12.2		0.5	1	mg/L
Field Personnel	JP				none	JP				none	JP				none
pH, Field	7.56				pH	7.33				pH	7.52				pH
Sample Function															
Sample Information															
Sample Temperature, Field	5.9				deg C	7.5				deg C	5.5				deg C
Turbidity, Field	12.9		0.5	2	NTU	12.9		0.5	2	NTU	66.7		0.5	2	NTU
M=MC SM 9213D 20TH															
Escherichia coli	4000				CFU/100ml	370				CFU/100ml	1300				CFU/100ml
M=MC SM 9222D 20TH															
Fecal Coliform	10000				CFU/100ml	290				CFU/100ml	890				CFU/100ml
M=MT EPA 200.8*SW846 6020A															
Calcium, Total, ICP-MS	9310		10	50	ug/L	9410		10	50	ug/L	11300		10	50	ug/L
Chromium, Dissolved, ICP-MS	0.59	<RDL	0.2	1	ug/L	0.82	<RDL	0.2	1	ug/L	2.51		0.2	1	ug/L
Chromium, Total, ICP-MS															
Copper, Dissolved, ICP-MS	2.41		0.4	2	ug/L	6.29		0.4	2	ug/L	2.2		0.4	2	ug/L
Copper, Total, ICP-MS															
Lead, Dissolved, ICP-MS	0.11	<RDL	0.1	0.5	ug/L	0.19	<RDL	0.1	0.5	ug/L		<MDL	0.1	0.5	ug/L
Lead, Total, ICP-MS															
Magnesium, Total, ICP-MS	5290		10	50	ug/L	4170		10	50	ug/L	8730		10	50	ug/L
Zinc, Dissolved, ICP-MS	5.33		0.5	2.5	ug/L	26.7		0.5	2.5	ug/L	3.97		0.5	2.5	ug/L
Zinc, Total, ICP-MS															

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL06	MERCERISL10	MERCERISL26
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	FOREST AVE. AND 84
Client Loc:			
Sampled:	03/14/09 12:08:00 PM	03/14/09 12:42:00 PM	03/14/09 9:34:00 AM
TimeSpan:			
Lab ID:	L47164-1	L47164-2	L47164-3
Matrix:	STORM WTR	STORM WTR	STORM WTR
% Solids:			

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
		-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis			
COMBINED LABS															
M=MT EPA 200.8/SW846 6020A*SM2340B															
Hardness, Calc	45		0.066	0.331	mg CaCO3/L	40.7		0.066	0.331	mg CaCO3/L	64.1		0.066	0.331	mg CaCO3/L
M=OR EPA 1664A															
SGT-Hem (oil, nonpolar)		<MDL	2.2	5.38	mg/L		<MDL	2.2	5.43	mg/L		<MDL	2.1	5.26	mg/L
M=OR SW846 3520C*SW846 8270D															
Chlorpyrifos		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L
Diazinon		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L
Disulfoton		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L
Malathion		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L
Parathion-Ethyl		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L
Parathion-Methyl		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L
Phorate		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L
M=OR SW846 3535A*SW846 8151A															
2,4,5-T		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L
2,4,5-TP (Silvex)		<MDL	0.039	0.2	ug/L		<MDL	0.039	0.2	ug/L		<MDL	0.039	0.2	ug/L
2,4-D		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L
2,4-DB		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L
Dalapon		<MDL	0.08	0.4	ug/L		<MDL	0.08	0.4	ug/L		<MDL	0.08	0.4	ug/L
Dicamba		<MDL	0.034	0.2	ug/L		<MDL	0.034	0.2	ug/L		<MDL	0.034	0.2	ug/L
Dichloroprop		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L
Dinoseb		<MDL	0.027	0.2	ug/L		<MDL	0.027	0.2	ug/L		<MDL	0.027	0.2	ug/L
MCPA		<MDL	0.028	0.2	ug/L		<MDL	0.028	0.2	ug/L		<MDL	0.028	0.2	ug/L
MCPP		<MDL	0.018	0.2	ug/L		<MDL	0.018	0.2	ug/L		<MDL	0.018	0.2	ug/L

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL32	MERCERISL42	MERCERISL10
Descrip:	CREEK NEAR HOLLYHI	E. MERCER WAY	SE 22ND ST, NEAR M
Client Loc:			
Sampled:	03/14/09 10:28:00 AM	03/14/09 11:15:00 AM	03/14/09 12:51:00 PM
TimeSpan:			
Lab ID:	L47164-4	L47164-5	L47164-6
Matrix:	STORM WTR	STORM WTR	STORM WTR
% Solids:			

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis		
COMBINED LABS															
M=CV SM2540-D															
Total Suspended Solids	17.9		0.8	1.6	mg/L	45.2		1.5	3	mg/L	6.33		0.5	1	mg/L
M=CV SM4500-N-C															
Total Nitrogen	0.915		0.05	0.1	mg/L	1.06		0.05	0.1	mg/L	0.806		0.05	0.1	mg/L
M=CV SM4500-P-B,F															
Total Phosphorus	0.0615		0.005	0.01	mg/L	0.139		0.005	0.01	mg/L	0.0727		0.005	0.01	mg/L
M=CV SM4500-P-F															
Orthophosphate Phosphorus	0.0194		0.002	0.005	mg/L	0.0594		0.002	0.005	mg/L	0.0412		0.002	0.005	mg/L
M=ES NONE															
Conductivity, Field	78.9		0.5	10	umhos/cm	139		0.5	10	umhos/cm	112		0.5	10	umhos/cm
Discharge Rate of Stream	1.4		0.05	0.1	cfs	0.5		0.05	0.1	cfs	0.6		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	99.6				%	95.2				%	96.5				%
Dissolved Oxygen, Field	12.3		0.5	1	mg/L	11.9		0.5	1	mg/L	11.4		0.5	1	mg/L
Field Personnel	JP				none	JP				none	JP				none
pH, Field	7.35				pH	7.51				pH	7.34				pH
Sample Function											FREP@L47164-2				none
Sample Information															
Sample Temperature, Field	5.9				deg C	5.3				deg C	7.5				deg C
Turbidity, Field	15.2		0.5	2	NTU	36		0.5	2	NTU	13.3		0.5	2	NTU
M=MC SM 9213D 20TH															
Escherichia coli	540				CFU/100ml	550				CFU/100ml	260				CFU/100ml
M=MC SM 9222D 20TH															
Fecal Coliform	400				CFU/100ml	350				CFU/100ml	250				CFU/100ml
M=MT EPA 200.8*SW846 6020A															
Calcium, Total, ICP-MS	7610		10	50	ug/L	10100		10	50	ug/L	10100		10	50	ug/L
Chromium, Dissolved, ICP-MS	3		0.2	1	ug/L	1.05		0.2	1	ug/L	0.82	<RDL	0.2	1	ug/L
Chromium, Total, ICP-MS															
Copper, Dissolved, ICP-MS	5.06		0.4	2	ug/L	5.36		0.4	2	ug/L	6.42		0.4	2	ug/L
Copper, Total, ICP-MS															
Lead, Dissolved, ICP-MS		<MDL	0.1	0.5	ug/L	0.14	<RDL	0.1	0.5	ug/L	0.18	<RDL	0.1	0.5	ug/L
Lead, Total, ICP-MS															
Magnesium, Total, ICP-MS	2870		10	50	ug/L	8610		10	50	ug/L	4680		10	50	ug/L
Zinc, Dissolved, ICP-MS	59.8		0.5	2.5	ug/L	1.7	<RDL	0.5	2.5	ug/L	26.5		0.5	2.5	ug/L
Zinc, Total, ICP-MS															

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL32	MERCERISL42	MERCERISL10
Descrip:	CREEK NEAR HOLLYHI	E. MERCER WAY	SE 22ND ST, NEAR M
Client Loc:			
Sampled:	03/14/09 10:28:00 AM	03/14/09 11:15:00 AM	03/14/09 12:51:00 PM
TimeSpan:			
Lab ID:	L47164-4	L47164-5	L47164-6
Matrix:	STORM WTR	STORM WTR	STORM WTR
% Solids:			

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis		
COMBINED LABS															
M=MT EPA 200.8/SW846 6020A*SM2340B															
Hardness, Calc	30.8		0.066	0.331	mg CaCO3/L	60.8		0.066	0.331	mg CaCO3/L	44.6		0.066	0.331	mg CaCO3/L
M=OR EPA 1664A															
SGT-Hem (oil, nonpolar)		<MDL	2.2	5.43	mg/L		<MDL	2.3	5.75	mg/L		<MDL	2.2	5.56	mg/L
M=OR SW846 3520C*SW846 8270D															
Chlorpyrifos		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L
Diazinon		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L
Disulfoton		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L
Malathion		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L
Parathion-Ethyl		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L
Parathion-Methyl		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L
Phorate		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L
M=OR SW846 3535A*SW846 8151A															
2,4,5-T		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L
2,4,5-TP (Silvex)		<MDL	0.039	0.2	ug/L		<MDL	0.039	0.2	ug/L		<MDL	0.039	0.2	ug/L
2,4-D		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L
2,4-DB		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L
Dalapon		<MDL	0.08	0.4	ug/L		<MDL	0.08	0.4	ug/L		<MDL	0.08	0.4	ug/L
Dicamba		<MDL	0.034	0.2	ug/L		<MDL	0.034	0.2	ug/L		<MDL	0.034	0.2	ug/L
Dichloroprop		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L
Dinoseb		<MDL	0.027	0.2	ug/L		<MDL	0.027	0.2	ug/L		<MDL	0.027	0.2	ug/L
MCPA		<MDL	0.028	0.2	ug/L		<MDL	0.028	0.2	ug/L		<MDL	0.028	0.2	ug/L
MCPP		<MDL	0.018	0.2	ug/L		<MDL	0.018	0.2	ug/L		<MDL	0.018	0.2	ug/L

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	ATMOSBLANK	FFBLANK	FFBLANK	FFBLANK
Descrip:	ATMOSPHERE BLANK	FIELD FILTER BLANK	FIELD FILTER BLANK	FIELD FILTER BLANK
Client Loc:				
Sampled:	03/14/09 9:30:00 AM	03/14/09 9:26:00 AM	03/14/09 9:26:00 AM	03/14/09 9:23:00 AM
TimeSpan:				
Lab ID:	L47164-7	L47164-8	L47164-8	L47164-9
Matrix:	BLANK WTR	FILTER WTR	BLANK WTR	BLANK WTR
% Solids:				

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
		-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis			
COMBINED LABS																				
M=CV SM2540-D																				
Total Suspended Solids																				
M=CV SM4500-N-C																				
Total Nitrogen																				
M=CV SM4500-P-B,F																				
Total Phosphorus																				
M=CV SM4500-P-F																				
Orthophosphate Phosphorus																	<MDL	0.002	0.005	mg/L
M=ES NONE																				
Conductivity, Field																				
Discharge Rate of Stream																				
Dissolved Oxygen Saturation, Field																				
Dissolved Oxygen, Field																				
Field Personnel																				
pH, Field																				
Sample Function																				
Sample Information											FFBLK Metals				none	FFBLK OrthoP				none
Sample Temperature, Field																				
Turbidity, Field																				
M=MC SM 9213D 20TH																				
Escherichia coli																				
M=MC SM 9222D 20TH																				
Fecal Coliform																				
M=MT EPA 200.8*SW846 6020A																				
Calcium, Total, ICP-MS																				
Chromium, Dissolved, ICP-MS							<MDL	0.2	1	ug/L										
Chromium, Total, ICP-MS		<MDL	0.2	1	ug/L															
Copper, Dissolved, ICP-MS							<MDL	0.4	2	ug/L										
Copper, Total, ICP-MS		<MDL	0.4	2	ug/L															
Lead, Dissolved, ICP-MS							<MDL	0.1	0.5	ug/L										
Lead, Total, ICP-MS		<MDL	0.1	0.5	ug/L															
Magnesium, Total, ICP-MS																				
Zinc, Dissolved, ICP-MS							<MDL	0.5	2.5	ug/L										
Zinc, Total, ICP-MS		<MDL	0.5	2.5	ug/L															

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	ATMOSBLANK					Locator:	FFBLANK					Locator:	FFBLANK					Locator:	FFBLANK				
Descrip:	ATMOSPHERE BLANK					Descrip:	FIELD FILTER BLANK					Descrip:	FIELD FILTER BLANK					Descrip:	FIELD FILTER BLANK				
Client Loc:						Client Loc:						Client Loc:						Client Loc:					
Sampled:	03/14/09 9:30:00 AM					Sampled:	03/14/09 9:26:00 AM					Sampled:	03/14/09 9:26:00 AM					Sampled:	03/14/09 9:23:00 AM				
TimeSpan:						TimeSpan:						TimeSpan:						TimeSpan:					
Lab ID:	L47164-7					Lab ID:	L47164-8					Lab ID:	L47164-8					Lab ID:	L47164-9				
Matrix:	BLANK WTR					Matrix:	FILTER WTR					Matrix:	BLANK WTR					Matrix:	BLANK WTR				
% Solids:						% Solids:						% Solids:						% Solids:					
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units		Value	Qual	MDL	RDL	Units		Value	Qual	MDL	RDL	Units	
		-Wet Weight Basis					-Wet Weight Basis						-Wet Weight Basis						-Wet Weight Basis				
COMBINED LABS																							
M=MT EPA 200.8/SW846 6020A*SM2340B																							
Hardness, Calc																							
M=OR EPA 1664A																							
SGT-Hem (oil, nonpolar)																							
M=OR SW846 3520C*SW846 8270D																							
Chlorpyrifos																							
Diazinon																							
Disulfoton																							
Malathion																							
Parathion-Ethyl																							
Parathion-Methyl																							
Phorate																							
M=OR SW846 3535A*SW846 8151A																							
2,4,5-T																							
2,4,5-TP (Silvex)																							
2,4-D																							
2,4-DB																							
Dalapon																							
Dicamba																							
Dichloroprop																							
Dinoseb																							
MCPA																							
MCPP																							

PROJECT: 421195CY

King County Environmental Lab Matrix Report

COMBINED LABS-Liquid

Locator	Sample Depth	Lab ID	Orthophosphate Phosphorus mg/L	Total Nitrogen mg/L	Total Phosphorus mg/L	Total Suspended Solids mg/L	Escherichia coli CFU/100ml	Fecal Coliform CFU/100ml	Calcium, Total, ICP-MS ug/L	Chromium, Dissolved, ICP-MS ug/L	Copper, Dissolved, ICP-MS ug/L	Hardness, Calc mg CaCO3/L	Lead, Dissolved, ICP-MS ug/L	Magnesium, Total, ICP-MS ug/L	Zinc, Dissolved, ICP-MS ug/L	Conductivity, Field umhos/cm	Discharge Rate of Stream cfs	Dissolved Oxygen Saturation, Field %	Dissolved Oxygen, Field mg/L	Sample Temperature, Field deg C	Turbidity, Field NTU	pH, Field pH
MERCERISL06		L47164-1	0.033	0.639	0.0608	13.4	4000	10000	9310	0.59	2.41	45	0.11	5290	5.33	128	1.1	99.5	12.3	5.9	12.9	7.56
MERCERISL10 AREP		L47164-2	0.04	0.679	0.0717	6.9	370	290	9410	0.82	6.29	40.7	0.19	4170	26.7	95	0.7	96.2	11.4	7.5	12.9	7.33
MERCERISL26		L47164-3	0.0341	1.13	0.133	80.6	1300	890	11300	2.51	2.2	64.1		8730	3.97	148	0.3	97.7	12.2	5.5	66.7	7.52
MERCERISL32		L47164-4	0.0194	0.915	0.0615	17.9	540	400	7610	3	5.06	30.8		2870	59.8	78.9	1.4	99.6	12.3	5.9	15.2	7.35
MERCERISL42		L47164-5	0.0594	1.06	0.139	45.2	550	350	10100	1.05	5.36	60.8	0.14	8610	1.7	139	0.5	95.2	11.9	5.3	36	7.51
MERCERISL10 FREP		L47164-6	0.0412	0.806	0.0727	6.33	260	250	10100	0.82	6.42	44.6	0.18	4680	26.5	112	0.6	96.5	11.4	7.5	13.3	7.34

Login Number: P47164

WLRD-MERCER ISLAND WQ STORM MONITORING

Project Number: 421195CY

Personnel: J. Power

Sample No. (Type)	P47164-1	P47164-2	P47164-3
Locator	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	
Locator Desc.	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time	14-MAR-09/1208	/1242	/0934
End Date/Time		APPP	UP + MUDDY
Time Span	UP, NOT TURBID	SOMEWHAT UP + MILKY + ODD ODOR	
Sample Depth			
Comments	Need DOT Key	North Island	84th Ave-Weyburn-West Island
COND, FIELD	127.5	95.0	148.2
DO SAT, FIELD	99.5	96.2	97.7
DO, FIELD	12.29	11.43	12.19
PERSONNEL	J. POWER	JP	JP
PH, FIELD	7.56	7.32	7.52
SAMP TEMP	5.89	7.49	5.48
STRM FLOW	1.1 CFS	0.7 CFS (0.7)	0.3 CFS SWIFTER
TURB, FIELD	~~12.9~~ 12.9	12.9	66.7
Dept., Matrix, Prod			
	3 STORM WTR ORTHOP	3 STORM WTR ORTHOP	3 STORM WTR ORTHOP
	3 STORM WTR TOTN	3 STORM WTR TOTN	3 STORM WTR TOTN
	3 STORM WTR TOTP	3 STORM WTR TOTP	3 STORM WTR TOTP
	3 STORM WTR TSS	3 STORM WTR TSS	3 STORM WTR TSS
	5 STORM WTR EC-MF	5 STORM WTR EC-MF	5 STORM WTR EC-MF
	5 STORM WTR FC-MF	5 STORM WTR FC-MF	5 STORM WTR FC-MF
	6 STORM WTR CA-ICPMS	6 STORM WTR CA-ICPMS	6 STORM WTR CA-ICPMS
	6 STORM WTR CR-ICPMS, DISS	6 STORM WTR CR-ICPMS, DISS	6 STORM WTR CR-ICPMS, DISS

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
J. Power	3/14/09	1400
RECEIVED BY	Date	Time
[illegible]	3/14/09	6:45pm
Sample Number(s)		
L 47164 1-9 (All)		

RELINQUISHED BY	Date	Time
RECEIVED BY	Date	Time
Sample Number(s)		

continue ...

WLRD-MERCER ISLAND WQ STORM MONITORING

Project Number: 421195CY

Personnel: _____

Sample No. (Type)	P47164-4	P47164-5	P47164-6
Locator	MERCERISL32	MERCERISL42	MERCERISL10
Short Loc. Desc.			MERCER10
Locator Desc.			SE 22ND ST, NEAR MOUTH
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time	14-MAR-09/1028	1115	1251
End Date/Time			
Time Span	UP BUT NOT TURBID	SOMEWHAT UP STRUCTURE "MUCKED OUT"	
Sample Depth			
Comments	Holly Hill Dr-West Island	Retention Stucture-East Island	Field Rep
COND, FIELD	78.9	138.5	112.1
DO SAT, FIELD	99.6	95.2	96.5
DO, FIELD	12.25	11.93	11.44
PERSONNEL	JP	JP	JP
PH, FIELD	7.35	7.51	7.34
SAMP TEMP	5.88	5.27	7.52
STRM FLOW	1.4 CFS	0.5 CFS	0.6 CFS
TURB, FIELD	15.2	36.0	13.3
SAMP FUNC	**********	**********	FIELD L47164-2

Dept., Matrix, Prod											
	3	STORM WTR	ORTHOP	3	STORM WTR	ORTHOP	3	STORM WTR	~~COND~~
	3	STORM WTR	TOTN	3	STORM WTR	TOTN	3	STORM WTR	ORTHOP
	3	STORM WTR	TOTP	3	STORM WTR	TOTP	3	STORM WTR	~~PH~~
	3	STORM WTR	TSS	3	STORM WTR	TSS	3	STORM WTR	TOTN
	5	STORM WTR	EC-MF	5	STORM WTR	EC-MF	3	STORM WTR	TOTP
	5	STORM WTR	FC-MF	5	STORM WTR	FC-MF	3	STORM WTR	TSS

continue ...

Login Number: P47164

WLRD-MERCER ISLAND WQ STORM MONITORING

Project Number: 421195CY

Personnel:

Sample No. (Type)	P47164-7(ATB)	P47164-8(FFB)	P47164-9(FFB)
Locator	ATMOSBLANK	FFBLANK	FFBLANK
Short Loc. Desc.	ATMOSBLANK	FFBLAN K	FFBLAN K
Locator Desc.	ATMOSPHERE BLANK	FIELD FILTER BLANK	FIELD FILTER BLANK
Site	METRO	METRO	METRO
Start Date/Time	14-MAR-09/0930	/0926	/0923
End Date/Time			
Time Span			
Sample Depth			
Comments	field blank (metals)	Field filter blank Metals	Field filter blank OrthoP
SAMP INFO	**********	FFBLK	FFBLK
Dept., Matrix, Prod			
	6 BLANK WTR CR-ICPMS	6 FILTER WTR CR-ICPMS, DISS	3 BLANK WTR ORTHOP
	6 BLANK WTR CU-ICPMS	6 FILTER WTR CU-ICPMS, DISS	
	6 BLANK WTR PB-ICPMS	6 FILTER WTR PB-ICPMS, DISS	
	6 BLANK WTR ZN-ICPMS	6 FILTER WTR ZN-ICPMS, DISS	

NO LABEL

End of Fieldsheet.

King County Environmental Lab Batch Report

WG101109 Orthophosphate

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47123-1	421195CI2	County Volunteer Lakes-city	CVORTHOP	FRESH WTR	3/15/2009 20:35	3/16/2009 13:35	3/23/2009 11:21		
L47123-2	421195CI2	County Volunteer Lakes-city	CVORTHOP	FRESH WTR	3/15/2009 20:49	3/16/2009 13:35	3/23/2009 11:23		
L47123-3	421195CI2	County Volunteer Lakes-city	CVORTHOP	FRESH WTR	3/15/2009 21:10	3/16/2009 13:35	3/23/2009 11:07		
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	STORM WTR	3/14/2009 12:08	3/18/2009 13:00	3/23/2009 11:38		
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	STORM WTR	3/14/2009 12:42	3/18/2009 13:00	3/23/2009 11:40		
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	STORM WTR	3/14/2009 9:34	3/18/2009 13:00	3/23/2009 11:50		
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	STORM WTR	3/14/2009 10:28	3/18/2009 13:00	3/23/2009 12:01		
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	STORM WTR	3/14/2009 11:15	3/18/2009 13:00	3/23/2009 12:03		
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	STORM WTR	3/14/2009 12:51	3/18/2009 13:00	3/23/2009 12:05		FREP@L47164-2
L47164-9	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	BLANK WTR	3/14/2009 9:23	3/18/2009 13:00	3/23/2009 12:09	WG101109-1, -2, -3, -4, -5, -6, -7, -8, -9, -10	
WG101109-1	MB		CVORTHOP	BLANK WTR		3/16/2009 13:35	3/23/2009 10:56		MB1 03/16/09
WG101109-2	SB		CVORTHOP	BLANK WTR		3/16/2009 13:35	3/23/2009 10:58		WG101109-1
WG101109-3	LCS		CVORTHOP	BLANK WTR		3/23/2009 11:03	3/23/2009 11:03		LEVEL1
WG101109-4	LD		CVORTHOP	FRESH WTR		3/16/2009 13:35	3/23/2009 11:09		L47123-3
WG101109-5	MS		CVORTHOP	FRESH WTR		3/16/2009 13:35	3/23/2009 11:11		L47123-3
WG101109-6	MB		CVORTHOP	BLANK WTR		3/18/2009 13:00	3/23/2009 11:28		MB4 03/18/09
WG101109-7	SB		CVORTHOP	BLANK WTR		3/18/2009 13:00	3/23/2009 11:30		WG101109-6
WG101109-8	LCS		CVORTHOP	BLANK WTR		3/23/2009 11:34	3/23/2009 11:34		LEVEL1
WG101109-9	LD		CVORTHOP	STORM WTR		3/18/2009 13:00	3/23/2009 11:53		L47164-3
WG101109-10	MS		CVORTHOP	STORM WTR		3/18/2009 13:00	3/23/2009 11:55		L47164-3

King County Environmental Lab Analytical QC Report

Workgroup: WG101109 Orthophosphate

MB:WG101109-1 Matrix: BLANK WTR Listtype: CVORTHOP Method: SM4500-P-F Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	

SB:WG101109-2 MB:WG101109-1 Matrix: BLANK WTR Listtype: CVORTHOP Method: SM4500-P-F Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	0.04	0.0427	107		80--120

LCS:WG101109-3 Matrix: BLANK WTR Listtype: CVORTHOP Method: SM4500-P-F Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.04	0.0371	93		85--115

LD:WG101109-4 L47123-3 Matrix: FRESH WTR Listtype: CVORTHOP Method: SM4500-P-F Project: 421195Cl2
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.0027	0.0021			20

MS:WG101109-5 L47123-3 Matrix: FRESH WTR Listtype: CVORTHOP Method: SM4500-P-F Project: 421195Cl2
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.0027	0.04	0.0418	98		75--125

MB:WG101109-6 Matrix: BLANK WTR Listtype: CVORTHOP Method: SM4500-P-F Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	

King County Environmental Lab Analytical QC Report

SB:WG101109-7 MB:WG101109-6 Matrix: BLANK WTR Listtype: CVORTHOP Method: SM4500-P-F Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	0.04	0.0385	96		80--120

LCS:WG101109-8 Matrix: BLANK WTR Listtype: CVORTHOP Method: SM4500-P-F Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.04	0.0345	86		85--115

LD:WG101109-9 L47164-3 Matrix: STORM WTR Listtype: CVORTHOP Method: SM4500-P-F Project: 421195CY
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.0341	0.0337	1		20

MS:WG101109-10 L47164-3 Matrix: STORM WTR Listtype: CVORTHOP Method: SM4500-P-F Project: 421195CY
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.0341	0.04	0.0762	105		75--125

King County Environmental Lab Batch Report

WG101103 Total Nitrogen/Total Phosphorus

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	CVTOTN	STORM WTR	3/14/2009 12:08	3/17/2009 12:15	3/18/2009 11:17		
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	CVTOTN	STORM WTR	3/14/2009 12:42	3/17/2009 12:15	3/18/2009 11:18		
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	CVTOTN	STORM WTR	3/14/2009 9:34	3/17/2009 12:15	3/18/2009 11:20		
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	CVTOTN	STORM WTR	3/14/2009 10:28	3/17/2009 12:15	3/18/2009 11:21		
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	CVTOTN	STORM WTR	3/14/2009 11:15	3/17/2009 12:15	3/18/2009 11:23		
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	CVTOTN	STORM WTR	3/14/2009 12:51	3/17/2009 12:15	3/18/2009 11:33		FREP@L47164-2
L47434-1	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 10:22	3/17/2009 12:15	3/18/2009 12:24		
L47434-2	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 10:55	3/17/2009 12:15	3/18/2009 12:35		
L47434-3	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 12:20	3/17/2009 12:15	3/18/2009 12:36		
L47434-4	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 11:40	3/17/2009 12:15	3/18/2009 12:38		
L47434-5	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 13:00	3/17/2009 12:15	3/18/2009 12:39		
L47434-6	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 13:40	3/17/2009 12:15	3/18/2009 12:41		
L47435-1	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 10:19	3/17/2009 12:15	3/18/2009 12:42		
L47435-2	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 10:45	3/17/2009 12:15	3/18/2009 12:44		
L47435-3	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 11:38	3/17/2009 12:15	3/18/2009 12:45		
L47435-4	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 12:39	3/17/2009 12:15	3/18/2009 12:47		
L47435-5	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 12:18	3/17/2009 12:15	3/18/2009 12:48		
L47435-6	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 13:17	3/17/2009 12:15	3/18/2009 12:56		
L47435-7	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 14:08	3/17/2009 12:15	3/18/2009 12:57		
L47435-8	421240B	WET WEATHER SURVEY (strmwtr)	CVTOTN	STORM WTR	3/16/2009 14:37	3/17/2009 12:15	3/18/2009 12:59		
L47500-1	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 10:30	3/17/2009 12:15	3/18/2009 11:35		
L47500-2	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 10:07	3/17/2009 12:15	3/18/2009 11:36		
L47500-3	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 9:51	3/17/2009 12:15	3/18/2009 11:38		
L47500-4	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 11:30	3/17/2009 12:15	3/18/2009 11:39	WG101103-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11	
L47500-5	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 10:50	3/17/2009 12:15	3/18/2009 11:41		
L47500-6	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 9:32	3/17/2009 12:15	3/18/2009 11:42		
L47500-7	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 9:16	3/17/2009 12:15	3/18/2009 11:44		
L47500-8	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 9:03	3/17/2009 12:15	3/18/2009 11:45		
L47500-11	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 10:30	3/17/2009 12:15	3/18/2009 11:56		
L47501-1	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 14:00	3/17/2009 12:15	3/18/2009 11:57		
L47501-2	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 13:40	3/17/2009 12:15	3/18/2009 11:59		
L47501-3	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 13:30	3/17/2009 12:15	3/18/2009 12:00		
L47501-4	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 15:00	3/17/2009 12:15	3/18/2009 12:02		
L47501-5	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 14:25	3/17/2009 12:15	3/18/2009 12:03		
L47501-6	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 13:10	3/17/2009 12:15	3/18/2009 12:20		
L47501-7	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 13:00	3/17/2009 12:15	3/18/2009 12:21		
L47501-8	421945	Juanita Creek Stormwater Retrofit	CVTOTN	STORM WTR	3/14/2009 12:50	3/17/2009 12:15	3/18/2009 12:23		
L47518-3	421250OS	Ambient Offshore Water Column-South	CVTOTP	FRESH WTR	3/16/2009 15:40	3/17/2009 12:15	3/18/2009 13:06		
WG101103-1	MB		CVTOTN	BLANK WTR		3/17/2009 12:15	3/18/2009 11:12		MB2 03/17/09 12:15

King County Environmental Lab Batch Report

WG101103-2	SB	CVTOTN	BLANK WTR	3/17/2009 12:15	3/18/2009 11:14	WG101103-1
WG101103-3	LCS	CVTOTN	BLANK WTR	3/17/2009 12:15	3/18/2009 11:15	LEVEL1
WG101103-4	LD	CVTOTN	STORM WTR	3/17/2009 12:15	3/18/2009 11:24	L47164-5
WG101103-5	MS	CVTOTN	STORM WTR	3/17/2009 12:15	3/18/2009 11:32	L47164-5
WG101103-6	LD	CVTOTP	STORM WTR	3/17/2009 12:15	3/19/2009 9:20	L47500-8
WG101103-7	MS	CVTOTP	STORM WTR	3/17/2009 12:15	3/19/2009 9:22	L47500-8
WG101103-8	MB	CVTOTN	BLANK WTR	3/17/2009 12:15	3/18/2009 12:17	MB3 03/17/09 12:15
WG101103-9	LCS	CVTOTN	BLANK WTR	3/17/2009 12:15	3/18/2009 12:18	LEVEL1
WG101103-10	LD	CVTOTN	STORM WTR	3/17/2009 12:15	3/18/2009 12:26	L47434-1
WG101103-11	MS	CVTOTN	STORM WTR	3/17/2009 12:15	3/18/2009 12:27	L47434-1

King County Environmental Lab Analytical QC Report

Workgroup: WG101103 Total Nitrogen/Total Phosphorus

MB:WG101103-1 Matrix: BLANK WTR Listtype: CVTOTN Method: SM4500-N-C Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Nitrogen	0.05	0.1	mg/L	<MDL	

MB:WG101103-1 Matrix: BLANK WTR Listtype: CVTOTP Method: SM4500-P-B,F Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Phosphorus	0.005	0.01	mg/L	<MDL	

SB:WG101103-2 MB:WG101103-1 Matrix: BLANK WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	<MDL	0.1	0.0998	100		80--120

SB:WG101103-2 MB:WG101103-1 Matrix: BLANK WTR Listtype: CVTOTN Method: SM4500-N-C Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	<MDL	1	1.02	102		80--120

LCS:WG101103-3 Matrix: BLANK WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.1	0.0954	95		85--115

LCS:WG101103-3 Matrix: BLANK WTR Listtype: CVTOTN Method: SM4500-N-C Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1	0.966	97		85--115

King County Environmental Lab Analytical QC Report

LD:WG101103-4 L47164-5 Matrix: STORM WTR Listtype: CVTOTN Method: SM4500-N-C Project: 421195CY
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1.06	1.04	1		20

LD:WG101103-4 L47164-5 Matrix: STORM WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: 421195CY
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.139	0.133	5		20

MS:WG101103-5 L47164-5 Matrix: STORM WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: 421195CY
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.139	0.1	0.229	89		75--125

MS:WG101103-5 L47164-5 Matrix: STORM WTR Listtype: CVTOTN Method: SM4500-N-C Project: 421195CY
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1.06	1	2.03	97		75--125

LD:WG101103-6 L47500-8 Matrix: STORM WTR Listtype: CVTOTN Method: SM4500-N-C Project: 421945
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1.85	1.75	5		20

LD:WG101103-6 L47500-8 Matrix: STORM WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: 421945
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.224	0.225	0		20

MS:WG101103-7 L47500-8 Matrix: STORM WTR Listtype: CVTOTN Method: SM4500-N-C Project: 421945
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1.85	1	2.74	89		75--125

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MS:WG101103-7 L47500-8 Matrix: STORM WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: 421945
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.224	0.1	0.316	92		75--125

MB:WG101103-8 Matrix: BLANK WTR Listtype: CVTOTN Method: SM4500-N-C Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Nitrogen	0.05	0.1	mg/L	<MDL	

MB:WG101103-8 Matrix: BLANK WTR Listtype: CVTOTP Method: SM4500-P-B,F Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Phosphorus	0.005	0.01	mg/L	<MDL	

LCS:WG101103-9 Matrix: BLANK WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.1	0.0933	93		85--115

LCS:WG101103-9 Matrix: BLANK WTR Listtype: CVTOTN Method: SM4500-N-C Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1	0.964	96		85--115

LD:WG101103-10 L47434-1 Matrix: STORM WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: 421240B
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.0364	0.0354	3		20

LD:WG101103-10 L47434-1 Matrix: STORM WTR Listtype: CVTOTN Method: SM4500-N-C Project: 421240B
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1	0.969	3		20

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MS:WG101103-11 L47434-1 Matrix: STORM WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: 421240B
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.0364	0.1	0.14	104		75--125

MS:WG101103-11 L47434-1 Matrix: STORM WTR Listtype: CVTOTN Method: SM4500-N-C Project: 421240B
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1	1	2.06	105		75--125

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WG101094 Total Suspended Solids

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	CVTSS	STORM WTR	3/14/2009 12:08	3/16/2009 12:00	3/17/2009 12:10		
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	CVTSS	STORM WTR	3/14/2009 12:42	3/16/2009 12:00	3/17/2009 12:11		
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	CVTSS	STORM WTR	3/14/2009 9:34	3/16/2009 12:00	3/17/2009 12:11		
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	CVTSS	STORM WTR	3/14/2009 10:28	3/16/2009 12:00	3/17/2009 12:12		
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	CVTSS	STORM WTR	3/14/2009 11:15	3/16/2009 12:00	3/17/2009 12:13	WG101094-1, -2, -3	
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	CVTSS	STORM WTR	3/14/2009 12:51	3/16/2009 12:00	3/17/2009 12:14		FREP@L47164-2
WG101094-1	MB		CVTSS	BLANK WTR		3/16/2009 12:00	3/17/2009 12:08		MB2 090316
WG101094-2	LCS		CVTSS	BLANK WTR		3/16/2009 12:00	3/17/2009 12:09		LEVEL1
WG101094-3	LD		CVTSS	STORM WTR		3/16/2009 12:00	3/17/2009 12:13		L47164-5

King County Environmental Lab Analytical QC Report

Workgroup: WG101094 Total Suspended Solids

MB:WG101094-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG101094-2 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	93	93		80--120

LD:WG101094-3 L47164-5 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421195CY
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1.5	3	mg/L	45.2	44.9	1		25

King County Environmental Lab Batch Report

WG101417 Field Parameters

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	STORM WTR	3/14/2009 12:08				
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	ESS-FIELDMETER	STORM WTR	3/14/2009 12:08				
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	ESS-FIELDMETER	STORM WTR	3/14/2009 12:42				
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	STORM WTR	3/14/2009 12:42				
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	STORM WTR	3/14/2009 9:34				
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	ESS-FIELDMETER	STORM WTR	3/14/2009 9:34				
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	ESS-FIELDMETER	STORM WTR	3/14/2009 10:28				
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	STORM WTR	3/14/2009 10:28				
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	ESS-FIELDMETER	STORM WTR	3/14/2009 11:15			WG101417-1, -2, -3	
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	STORM WTR	3/14/2009 11:15				
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	ESS-FIELDMETER	STORM WTR	3/14/2009 12:51				FREP@L47164-2
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	STORM WTR	3/14/2009 12:51				FREP@L47164-2
L47164-8	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	BLANK WTR	3/14/2009 9:26				
L47164-9	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	BLANK WTR	3/14/2009 9:23				
WG101417-1	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG101417-2	FREP		ESS-FIELDMETER	STORM WTR					L47164-2 RANGE1
WG101417-3	CS		ESS-FIELDMETER	BLANK WTR					RANGE1

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Workgroup: WG101417 Field Parameters

CS:WG101417-1 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	74	100		90--110
Turbidity, Field	0.5	2	NTU	5.3	5.3	100		80--120
pH, Field			pH	6.86	6.87	0.01		0--.2

FREP:WG101417-2 L47164-2 Matrix: STORM WTR Listtype: ESS-FIELDMETER Method: NONE Project: 421195CY
(Field Replicate)

Parameter	MDL	RDL	Units	Samp Value	EP Value	RPD^	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	95	112	17	*	10
Dissolved Oxygen, Field	0.5	1	mg/L	11.4	11.4	0		20
Sample Temperature, Field			deg C	7.5	7.5	0.03		0.3
Turbidity, Field	0.5	2	NTU	12.9	13.3	3		20
pH, Field			pH	7.33	7.34	0.01		0.2

CS:WG101417-3 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	74.2	100		90--110
Dissolved Oxygen Saturation, Field			%	100	103	103		96--104
pH, Field			pH	6.86	6.9	0.04		0--.2

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WG100995 E. coli

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	MCEC-MF	STORM WTR	3/14/2009 12:08		3/15/2009 12:20		
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	MCEC-MF	STORM WTR	3/14/2009 12:42		3/15/2009 12:20		
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	MCEC-MF	STORM WTR	3/14/2009 9:34		3/15/2009 12:20		
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	MCEC-MF	STORM WTR	3/14/2009 10:28		3/15/2009 12:20		
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	MCEC-MF	STORM WTR	3/14/2009 11:15		3/15/2009 12:20	WG100992-4, -5,	
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	MCEC-MF	STORM WTR	3/14/2009 12:51		3/15/2009 12:20	WG100995-1, -2, -3	FREP@L47164-2
WG100995-1	LD		MCEC-MF	STORM WTR			3/15/2009 12:20		L47164-1
WG100995-2	PC		MCEC-MF	STORM WTR			3/15/2009 12:20		QC-PERFORMED:16-MAR-09
WG100995-3	NC		MCEC-MF	STORM WTR			3/15/2009 12:20		QC-PERFORMED:16-MAR-09
WG100992-4	BF		MCFC-MF	BLANK WTR			3/16/2009 8:55		QC-PERFORMED:16-MAR-09
WG100992-5	AF		MCFC-MF	BLANK WTR			3/16/2009 8:55		QC-PERFORMED:16-MAR-09

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Workgroup: WG100995 E. coli

LD:WG100995-1 L47164-1 Matrix: STORM WTR Listtype: MCEC-MF Method: SM 9213D 20TH Project: 421195CY
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	Rlog	P value	Qual
Escherichia coli			CFU/100ml	4000	2700	0.17	0.32	N3

PC:WG100995-2 Matrix: STORM WTR Listtype: MCEC-MF Method: SM 9213D 20TH Project:
(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Escherichia coli			CFU/100ml		PASS

NC:WG100995-3 Matrix: STORM WTR Listtype: MCEC-MF Method: SM 9213D 20TH Project:
(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Escherichia coli			CFU/100ml		PASS

BF:WG100992-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG100992-5 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

King County Environmental Lab Batch Report

WG100902 Fecal coliform

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	MCFC-MF	STORM WTR	3/14/2009 12:08		3/15/2009 12:10		
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	MCFC-MF	STORM WTR	3/14/2009 12:42		3/15/2009 12:10		
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	MCFC-MF	STORM WTR	3/14/2009 9:34		3/15/2009 12:10		
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	MCFC-MF	STORM WTR	3/14/2009 10:28		3/15/2009 12:10		
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	MCFC-MF	STORM WTR	3/14/2009 11:15		3/15/2009 12:10		
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	MCFC-MF	STORM WTR	3/14/2009 12:51		3/15/2009 12:10		FREP@L47164-2
WG100902-1	LD		MCFC-MF	STORM WTR			3/15/2009 12:10	WG100902-1, -2, -3, -4, -5	L47164-1
WG100902-2	PC		MCFC-MF	BLANK WTR			3/15/2009 12:10		QC-PERFORMED 16-MAR-09
WG100902-3	NC		MCFC-MF	BLANK WTR			3/15/2009 12:10		QC-PERFORMED 16-MAR-09
WG100902-4	BF		MCFC-MF	BLANK WTR			3/15/2009 12:10		QC-PERFORMED 16-MAR-09
WG100902-5	AF		MCFC-MF	BLANK WTR			3/15/2009 12:10		QC-PERFORMED 16-MAR-09

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Workgroup: WG100902 Fecal coliform

LD:WG100902-1 L47164-1 Matrix: STORM WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: 421195CY
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	Rlog	P value	Qual
Fecal Coliform			CFU/100ml	10000	2600	0.59	0.81	N3

PC:WG100902-2 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG100902-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG100902-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG100902-5 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

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WG101320 Total Metals & Hardness

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L46941-1	421196AV	KCRM - UST GROUNDWATER	MTICPMS	GRND WTR	3/24/2009 11:58	4/2/2009 7:00	4/3/2009 10:58		
L46941-2	421196AV	KCRM - UST GROUNDWATER	MTICPMS	GRND WTR	3/24/2009 14:52	4/2/2009 7:00	4/3/2009 11:03		
L46941-3	421196AV	KCRM - UST GROUNDWATER	MTICPMS	GRND WTR	3/24/2009 13:24	4/2/2009 7:00	4/3/2009 11:09		
L46941-4	421196AV	KCRM - UST GROUNDWATER	MTICPMS	GRND WTR	3/24/2009 10:24	4/2/2009 7:00	4/3/2009 11:15		
L46941-5	421196AV	KCRM - UST GROUNDWATER	MTICPMS	GRND WTR	3/24/2009 16:04	4/2/2009 7:00	4/3/2009 11:20		
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/14/2009 12:08	4/2/2009 7:00	4/6/2009 13:06		
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/14/2009 12:42	4/2/2009 7:00	4/6/2009 13:06		
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/14/2009 9:34	4/2/2009 7:00	4/6/2009 13:06		
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/14/2009 10:28	4/2/2009 7:00	4/6/2009 13:06		
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/14/2009 11:15	4/2/2009 7:00	4/6/2009 13:06		
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/14/2009 12:51	4/2/2009 7:00	4/6/2009 13:06	WG101320-1, -2, -3, -4	FREP@L47164-2
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/28/2009 13:53	4/2/2009 7:00	4/6/2009 13:06		
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/28/2009 14:20	4/2/2009 7:00	4/6/2009 13:06		
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/28/2009 11:20	4/2/2009 7:00	4/6/2009 13:06		
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/28/2009 12:15	4/2/2009 7:00	4/6/2009 13:06		
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/28/2009 12:50	4/2/2009 7:00	4/6/2009 13:06		
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/28/2009 11:29	4/2/2009 7:00	4/6/2009 13:06		FREP@L47563-3
L47673-1	421169	QA/QC	MTICPMS	FRESH WTR	3/25/2009 0:00	4/2/2009 7:00	4/3/2009 13:19		
WG101320-1	MB		MTHARD-ICPMS	BLANK WTR		4/2/2009 7:00	4/6/2009 13:06		METHOD BLANK
WG101320-2	SB		MTHARD-ICPMS	BLANK WTR		4/2/2009 7:00	4/6/2009 13:06		WG101320-1 MS-20
WG101320-3	LD		MTHARD-ICPMS	GRND WTR		4/2/2009 7:00	4/6/2009 13:06		L47628-1 RPD-LIQ
WG101320-4	MS		MTHARD-ICPMS	GRND WTR		4/2/2009 7:00	4/6/2009 13:06		L47628-1 MS-20

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Workgroup: WG101320 Total Metals & Hardness

MB:WG101320-1 Matrix: BLANK WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Hardness, Calc	0.066	0.331	mg CaCO3/L	<MDL	

MB:WG101320-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Barium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Calcium, Total, ICP-MS	10	50	ug/L	<MDL	
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Magnesium, Total, ICP-MS	10	50	ug/L	<MDL	
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	

SB:WG101320-2 MB:WG101320-1 Matrix: BLANK WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	<MDL	33.1	32.4	98		85--115

SB:WG101320-2 MB:WG101320-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.7	99		85--115
Barium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.4	97		85--115
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.2	101		85--115
Calcium, Total, ICP-MS	10	50	ug/L	<MDL	5000	4740	95		85--115
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	20.3	102		85--115
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.2	96		85--115
Magnesium, Total, ICP-MS	10	50	ug/L	<MDL	5000	5000	100		85--115
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.5	102		85--115
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	21	105		85--115

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LD:WG101320-3 L47628-1 Matrix: GRND WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 423582-000-2
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	140	141	1		20

LD:WG101320-3 L47628-1 Matrix: GRND WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 423582-000-2
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	0.41	0.42			20
Barium, Total, ICP-MS	0.05	0.25	ug/L	25.2	25.5	1		20
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Calcium, Total, ICP-MS	10	50	ug/L	36100	36400	1		20
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	<MDL			20
Lead, Total, ICP-MS	0.1	0.5	ug/L	0.1	0.1			20
Magnesium, Total, ICP-MS	10	50	ug/L	12100	12200	1		20
Selenium, Total, ICP-MS	0.5	2.5	ug/L	0.77	0.83			20
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20

MS:WG101320-4 L47628-1 Matrix: GRND WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 423582-000-2
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	140	33.1	172			(No MS/MSD %Rec. due to 4x rule)

King County Environmental Lab Analytical QC Report

MS:WG101320-4 L47628-1 Matrix: GRND WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 423582-000-2
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	0.41	20	20.2	99		75--125
Barium, Total, ICP-MS	0.05	0.25	ug/L	25.2	20	45.7	102		75--125
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.3	96		75--125
Calcium, Total, ICP-MS	10	50	ug/L	36100	5000	40600			(No MS/MSD %Rec. due to 4x rule)
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	21.8	109		75--125
Lead, Total, ICP-MS	0.1	0.5	ug/L	0.1	20	18.4	91		75--125
Magnesium, Total, ICP-MS	10	50	ug/L	12100	5000	17200	103		75--125
Selenium, Total, ICP-MS	0.5	2.5	ug/L	0.77	20	19.7	94		75--125
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.5	103		75--125

King County Environmental Lab Batch Report

WG101510 Total Metals

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47164-7	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS	BLANK WTR	3/14/2009 9:30	4/14/2009 7:45	4/14/2009 12:07		
L47563-7	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS	BLANK WTR	3/28/2009 11:05	4/14/2009 7:45	4/14/2009 12:11	WG101510-1	
WG101510-1	MB		MTICPMS	BLANK WTR		4/14/2009 7:45	4/14/2009 12:03		METHOD BLANK

King County Environmental Lab Analytical QC Report

Workgroup: WG101510 Total Metals

MB:WG101510-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	

King County Environmental Lab Batch Report

WG101296 Dissolved Metals

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47452-1	421196DD	KCRM - ESA SUPPORT	MTICPMS-DISS	FRESH WTR	3/18/2009 9:00	3/30/2009 12:30	3/31/2009 14:18		
L47452-2	421196DD	KCRM - ESA SUPPORT	MTICPMS-DISS	FRESH WTR	3/18/2009 9:35	3/30/2009 12:30	3/31/2009 14:34		
L47452-3	421196DD	KCRM - ESA SUPPORT	MTICPMS-DISS	FRESH WTR	3/18/2009 12:30	3/30/2009 12:30	3/31/2009 14:39		
L47452-4	421196DD	KCRM - ESA SUPPORT	MTICPMS-DISS	FRESH WTR	3/18/2009 12:05	3/30/2009 12:30	3/31/2009 14:45		
L47452-5	421196DD	KCRM - ESA SUPPORT	MTICPMS-DISS	FRESH WTR	3/18/2009 11:30	3/30/2009 12:30	3/31/2009 15:00		
L47452-6	421196DD	KCRM - ESA SUPPORT	MTICPMS-DISS	FILTER WTR	3/18/2009 9:05	3/30/2009 12:30	3/31/2009 15:06		
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	STORM WTR	3/14/2009 12:08	3/30/2009 12:30	3/31/2009 13:42		
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	STORM WTR	3/14/2009 12:42	3/30/2009 12:30	3/31/2009 13:47		
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	STORM WTR	3/14/2009 9:34	3/30/2009 12:30	3/31/2009 13:52		
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	STORM WTR	3/14/2009 10:28	3/30/2009 12:30	3/31/2009 13:57	WG101296-1, -2, -3, -4	
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	STORM WTR	3/14/2009 11:15	3/30/2009 12:30	3/31/2009 14:03		
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	STORM WTR	3/14/2009 12:51	3/30/2009 12:30	3/31/2009 14:08		FREP@L47164-2
L47164-8	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	FILTER WTR	3/14/2009 9:26	3/30/2009 12:30	3/31/2009 14:13		
L47500-3	421945	Juanita Creek Stormwater Retrofit	MTICPMS-DISS	STORM WTR	3/14/2009 9:51	3/30/2009 12:30	3/31/2009 15:11		
WG101296-1	MB		MTICPMS-DISS	BLANK WTR		3/30/2009 12:30	3/31/2009 13:31		METHOD BLANK
WG101296-2	SB		MTICPMS-DISS	BLANK WTR		3/30/2009 12:30	3/31/2009 13:36		WG101296-1 MS-20 SPK BLK
WG101296-3	LD		MTICPMS-DISS	FRESH WTR		3/30/2009 12:30	3/31/2009 14:50		L47452-4 RPD-LIQ LAB DUP
WG101296-4	MS		MTICPMS-DISS	FRESH WTR		3/30/2009 12:30	3/31/2009 14:55		L47452-4 MS-20 MAT SPK

King County Environmental Lab Analytical QC Report

Workgroup: WG101296 Dissolved Metals

MB:WG101296-1 Matrix: BLANK WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	

SB:WG101296-2 MB:WG101296-1 Matrix: BLANK WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.9	99		85--115
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.1	100		85--115
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4590	92		85--115
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	20	20.1	101		85--115
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	20	20.2	101		85--115
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.1	100		85--115
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4770	95		85--115
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.4	97		85--115
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.2	101		85--115
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.4	102		85--115
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	21.5	108		85--115

King County Environmental Lab Analytical QC Report

LD:WG101296-3 L47452-4 Matrix: FRESH WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421196DD
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	0.35	0.36			20
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Calcium, Dissolved, ICP-MS	10	50	ug/L	7670	7690	0		20
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	<MDL			20
Copper, Dissolved, ICP-MS	0.4	2	ug/L	0.65	0.68			20
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Magnesium, Dissolved, ICP-MS	10	50	ug/L	2320	2340	1		20
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	14.2	14.2	0		20
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	0.27	0.28			20
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	0.79	1.6			20

MS:WG101296-4 L47452-4 Matrix: FRESH WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421196DD
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	0.35	20	21.8	107		75--125
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	22	110		75--125
Calcium, Dissolved, ICP-MS	10	50	ug/L	7670	5000	13300	113		75--125
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	20	21.2	106		75--125
Copper, Dissolved, ICP-MS	0.4	2	ug/L	0.65	20	22.5	109		75--125
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	21.7	108		75--125
Magnesium, Dissolved, ICP-MS	10	50	ug/L	2320	5000	7660	107		75--125
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	14.2	20	36.4	111		75--125
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	0.27	20	22.1	109		75--125
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	22	110		75--125
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	0.79	20	24	116		75--125

King County Environmental Lab Batch Report

WG101421 Chlorinated Herbicides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	ORHERB	STORM WTR	3/14/2009 12:08	3/20/2009 11:11			
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	ORHERB	STORM WTR	3/14/2009 12:42	3/20/2009 11:11			
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	ORHERB	STORM WTR	3/14/2009 9:34	3/20/2009 11:11			
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	ORHERB	STORM WTR	3/14/2009 10:28	3/20/2009 11:11			
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	ORHERB	STORM WTR	3/14/2009 11:15	3/20/2009 11:11			
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	ORHERB	STORM WTR	3/14/2009 12:51	3/20/2009 11:11			FREP@L47164-2

King County Environmental Lab Analytical QC Report

Workgroup: WG101421 Chlorinated Herbicides
(QC data is attached)

SAMPLE SUMMARY

Client: King County Environmental Laboratory

Job Number: 580-13062-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
580-13062-1	P47164-1	Water	03/14/2009 0000	03/17/2009 1230
580-13062-2	P47164-2	Water	03/14/2009 0000	03/17/2009 1230
580-13062-3	P47164-3	Water	03/14/2009 0000	03/17/2009 1230
580-13062-3MS	P47164-3	Water	03/14/2009 0000	03/17/2009 1230
580-13062-3MSD	P47164-3	Water	03/14/2009 0000	03/17/2009 1230
580-13062-4	P47164-4	Water	03/14/2009 0000	03/17/2009 1230
580-13062-5	P47164-5	Water	03/14/2009 0000	03/17/2009 1230
580-13062-6	P47164-6	Water	03/14/2009 0000	03/17/2009 1230

Client: King County Environmental Laboratory

Job Number: 580-13062-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 580-41697					
LCS 580-41697/2-A	Lab Control Spike	T	Water	8151A	
MB 580-41697/1-A	Method Blank	T	Water	8151A	
580-13062-1	P47164-1	T	Water	8151A	
580-13062-2	P47164-2	T	Water	8151A	
580-13062-3	P47164-3	T	Water	8151A	
580-13062-3MS	Matrix Spike	T	Water	8151A	
580-13062-3MSD	Matrix Spike Duplicate	T	Water	8151A	
580-13062-4	P47164-4	T	Water	8151A	
580-13062-5	P47164-5	T	Water	8151A	
580-13062-6	P47164-6	T	Water	8151A	
Analysis Batch:580-41782					
LCS 580-41697/2-A	Lab Control Spike	T	Water	8151A	580-41697
MB 580-41697/1-A	Method Blank	T	Water	8151A	580-41697
580-13062-1	P47164-1	T	Water	8151A	580-41697
580-13062-2	P47164-2	T	Water	8151A	580-41697
580-13062-3	P47164-3	T	Water	8151A	580-41697
580-13062-3MS	Matrix Spike	T	Water	8151A	580-41697
580-13062-3MSD	Matrix Spike Duplicate	T	Water	8151A	580-41697
580-13062-4	P47164-4	T	Water	8151A	580-41697
580-13062-5	P47164-5	T	Water	8151A	580-41697
580-13062-6	P47164-6	T	Water	8151A	580-41697

Report Basis
T = Total

Client: King County Environmental Laboratory

Job Number: 580-13062-1

Surrogate Recovery Report

8151A Herbicides (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCPA %Rec
580-13062-1	P47164-1	67
580-13062-2	P47164-2	99
580-13062-3	P47164-3	57
580-13062-4	P47164-4	44
580-13062-5	P47164-5	42
580-13062-6	P47164-6	65
MB 580-41697/1-A		105
LCS 580-41697/2-A		71
580-13062-3 MS	P47164-3 MS	87
580-13062-3 MSD	P47164-3 MSD	84

Surrogate	Acceptance Limits
DCPA = 2,4-Dichlorophenylacetic acid	40-135

Client: King County Environmental Laboratory

Job Number: 580-13062-1

Method Blank - Batch: 580-41697

Method: 8151A
Preparation: 8151A

Lab Sample ID: MB 580-41697/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/24/2009 1832
Date Prepared: 03/20/2009 1354

Analysis Batch: 580-41782
Prep Batch: 580-41697
Units: ug/L

Instrument ID: TAC008
Lab File ID: L30894.d
Initial Weight/Volume: 125 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Result	Qual	MDL	RL
Dalapon	ND		0.080	0.40
Dicamba	ND		0.034	0.20
Mecoprop	ND		0.018	0.20
MCPA	ND		0.028	0.20
Dichlorprop	ND		0.035	0.20
2,4-D	ND		0.015	0.20
Silvex (2,4,5-TP)	ND		0.039	0.20
2,4,5-T	ND		0.035	0.20
Dinoseb	ND		0.027	0.20
2,4-DB	ND		0.019	0.20

Surrogate	% Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	105	40 - 135

Lab Control Spike - Batch: 580-41697

Method: 8151A
Preparation: 8151A

Lab Sample ID: LCS 580-41697/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/24/2009 1858
Date Prepared: 03/20/2009 1354

Analysis Batch: 580-41782
Prep Batch: 580-41697
Units: ug/L

Instrument ID: TAC008
Lab File ID: L30895.d
Initial Weight/Volume: 125 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dalapon	8.00	4.87	61	16 - 103	
Dicamba	8.00	5.59	70	51 - 125	
Mecoprop	8.00	5.73	72	57 - 139	
MCPA	8.00	6.30	79	60 - 145	
Dichlorprop	8.00	6.19	77	70 - 120	
2,4-D	8.00	6.45	81	42 - 128	
Silvex (2,4,5-TP)	8.00	5.85	73	63 - 119	
2,4,5-T	8.00	6.58	82	35 - 110	
Dinoseb	8.00	7.48	93	17 - 153	
2,4-DB	8.00	6.63	83	35 - 115	

Surrogate	% Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	71	40 - 135

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: King County Environmental Laboratory

Job Number: 580-13062-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 580-41697

Method: 8151A
Preparation: 8151A

MS Lab Sample ID:	580-13062-3	Analysis Batch: 580-41782	Instrument ID: TAC008
Client Matrix:	Water	Prep Batch: 580-41697	Lab File ID: L30899.d
Dilution:	1.0		Initial Weight/Volume: 125 mL
Date Analyzed:	03/24/2009 2038		Final Weight/Volume: 1 mL
Date Prepared:	03/20/2009 1354		Injection Volume: 1 uL

MSD Lab Sample ID:	580-13062-3	Analysis Batch: 580-41782	Instrument ID: TAC008
Client Matrix:	Water	Prep Batch: 580-41697	Lab File ID: L30900.d
Dilution:	1.0		Initial Weight/Volume: 125 mL
Date Analyzed:	03/24/2009 2103		Final Weight/Volume: 1 mL
Date Prepared:	03/20/2009 1354		Injection Volume: 1 uL

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Dalapon	57	55	16 - 103	4	39		
Dicamba	64	63	51 - 125	1	19		
Mecoprop	70	67	57 - 139	4	22		
MCPA	71	71	60 - 145	1	30		
Dichlorprop	68	68	70 - 120	1	30	F	F
2,4-D	73	73	42 - 128	1	15		
Silvex (2,4,5-TP)	91	93	63 - 119	3	17		
2,4,5-T	74	79	35 - 110	7	30		
Dinoseb	64	81	17 - 153	25	33		
2,4-DB	73	80	35 - 115	9	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	87	84	40 - 135

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: King County Environmental Laboratory

Job Number: 580-13062-1

Matrix Spike/
Matrix Spike Duplicate Data Report - Batch: 580-41697

Method: 8151A
Preparation: 8151A

MS Lab Sample ID: 580-13062-3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/24/2009 2038
Date Prepared: 03/20/2009 1354

Units: ug/L

MSD Lab Sample ID: 580-13062-3
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 03/24/2009 2103
Date Prepared: 03/20/2009 1354

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual		MSD Result/Qual	
Dalapon	ND	8.00	8.00	4.53		4.36	
Dicamba	ND	8.00	8.00	5.09		5.03	
Mecoprop	ND	8.00	8.00	5.60		5.38	
MCPA	ND	8.00	8.00	5.72		5.69	
Dichlorprop	ND	8.00	8.00	5.45	F	5.41	F
2,4-D	ND	8.00	8.00	5.87		5.81	
Silvex (2,4,5-TP)	ND	8.00	8.00	7.26		7.45	
2,4,5-T	ND	8.00	8.00	5.93		6.34	
Dinoseb	ND	8.00	8.00	5.08		6.52	
2,4-DB	ND	8.00	8.00	5.87		6.42	

Calculations are performed before rounding to avoid round-off errors in calculated results.

King County Environmental Lab Batch Report

WG101043 Organophosphorus Pesticides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	OROPPEST-SHORT	STORM WTR	3/14/2009 12:08	3/16/2009 13:00	3/18/2009 12:44		
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	OROPPEST-SHORT	STORM WTR	3/14/2009 12:42	3/16/2009 13:00	3/18/2009 13:25		
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	OROPPEST-SHORT	STORM WTR	3/14/2009 9:34	3/16/2009 13:00	3/18/2009 14:05		
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	OROPPEST-SHORT	STORM WTR	3/14/2009 10:28	3/16/2009 13:00	3/18/2009 14:46		
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	OROPPEST-SHORT	STORM WTR	3/14/2009 11:15	3/16/2009 13:00	3/18/2009 15:27		
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	OROPPEST-SHORT	STORM WTR	3/14/2009 12:51	3/16/2009 13:00	3/18/2009 16:08	WG101043-1, -2, -3, -4	FREP@L47164-2
WG101043-1	MB		OROPPEST-SHORT	BLANK WTR		3/16/2009 13:00	3/18/2009 10:01		MB090316
WG101043-2	SB		OROPPEST-SHORT	BLANK WTR		3/16/2009 13:00	3/18/2009 10:41		WG101043-1
WG101043-3	MS		OROPPEST-SHORT	STORM WTR		3/16/2009 13:00	3/18/2009 11:22		L47164-5
WG101043-4	MSD		OROPPEST-SHORT	STORM WTR		3/16/2009 13:00	3/18/2009 12:03		WG101043-3 L47164-5

King County Environmental Lab Analytical QC Report

Workgroup: WG101043 Orthophosphorus Pestiicides

MB:WG101043-1 Matrix: BLANK WTR Listtype: OROPPEST-SHORT Method: SW846 3520C*SW846 8270D Project: 421195CY
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Chlorpyrifos	0.034	0.05	ug/L	<MDL	
Diazinon	0.043	0.05	ug/L	<MDL	
Disulfoton	0.027	0.05	ug/L	<MDL	
Malathion	0.048	0.05	ug/L	<MDL	
Parathion-Ethyl	0.045	0.05	ug/L	<MDL	
Parathion-Methyl	0.036	0.05	ug/L	<MDL	
Phorate	0.033	0.05	ug/L	<MDL	

SB:WG101043-2 MB:WG101043-1 Matrix: BLANK WTR Listtype: OROPPEST-SHORT Method: SW846 3520C*SW846 8270D Project: 421195CY
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Chlorpyrifos	0.034	0.05	ug/L	<MDL	0.25	0.222	89		55--147
Diazinon	0.043	0.05	ug/L	<MDL	0.25	0.279	112		63--129
Disulfoton	0.027	0.05	ug/L	<MDL	0.25	0.131	52		40--132
Malathion	0.048	0.05	ug/L	<MDL	0.25	0.215	86		62--152
Parathion-Ethyl	0.045	0.05	ug/L	<MDL	0.25	0.209	84		46--203
Parathion-Methyl	0.036	0.05	ug/L	<MDL	0.25	0.201	81		31--215
Phorate	0.033	0.05	ug/L	<MDL	0.25	0.147	59		49--126

MSD:WG101043-4 MS:WG101043-3 L47164-5 Matrix: STORM WTR Listtype: OROPPEST-SHORT Method: SW846 3520C*SW846 8270D Project: 421195CY
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Chlorpyrifos	0.032	0.0472	ug/L	<MDL	0.236	0.201	85		55--147	0.236	0.202	86		1		15
Diazinon	0.041	0.0472	ug/L	<MDL	0.236	0.26	110		63--129	0.236	0.273	116		5		12
Disulfoton	0.025	0.0472	ug/L	<MDL	0.236	0.145	61		40--132	0.236	0.159	68		11		18
Malathion	0.045	0.0472	ug/L	<MDL	0.236	0.271	115		62--152	0.236	0.289	123		7		14
Parathion-Ethyl	0.042	0.0472	ug/L	<MDL	0.236	0.239	101		46--203	0.236	0.271	115		13		21
Parathion-Methyl	0.034	0.0472	ug/L	<MDL	0.236	0.259	110		31--215	0.236	0.276	117		6		25
Phorate	0.031	0.0472	ug/L	<MDL	0.236	0.146	62		49--126	0.236	0.16	68		9		15

King County Environmental Lab Analytical QC Report

Surrogate:	rifos-D10
(Lab Limits)	0--164
L47164-1	80
L47164-2	82
L47164-3	85
L47164-4	80
L47164-5	78
L47164-6	78
WG101043-1	80
WG101043-2	89
WG101043-3	89
WG101043-4	82

King County Environmental Lab Batch Report

WG101120 Hexane Extractable Material - Silica Gel Treated

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47150-1	421196AN	KCRM - Decant - BOG	ORSGT-HEM	OTHR WTR	3/10/2009 11:55	3/18/2009 7:00	3/19/2009 8:00		
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	ORSGT-HEM	STORM WTR	3/14/2009 12:08	3/18/2009 7:00	3/19/2009 8:00		
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	ORSGT-HEM	STORM WTR	3/14/2009 12:42	3/18/2009 7:00	3/19/2009 8:00		
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	ORSGT-HEM	STORM WTR	3/14/2009 9:34	3/18/2009 7:00	3/19/2009 8:00		
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	ORSGT-HEM	STORM WTR	3/14/2009 10:28	3/18/2009 7:00	3/19/2009 8:00	WG101120-1, -2, -3	
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	ORSGT-HEM	STORM WTR	3/14/2009 11:15	3/18/2009 7:00	3/19/2009 8:00		
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	ORSGT-HEM	STORM WTR	3/14/2009 12:51	3/18/2009 7:00	3/19/2009 8:00		FREP@L47164-2
WG101120-1	MB		ORSGT-HEM	BLANK WTR		3/18/2009 7:00	3/19/2009 8:00		MB090318
WG101120-2	SB		ORSGT-HEM	BLANK WTR		3/18/2009 7:00	3/19/2009 8:00		WG101120-1
WG101120-3	MS		ORSGT-HEM	STORM WTR		3/18/2009 7:00	3/19/2009 8:00		L47164-3

King County Environmental Lab Analytical QC Report

Workgroup: WG101120 Hexane Extractable Material - Silica Gel Treated

MB:WG101120-1 Matrix: BLANK WTR Listtype: ORSGT-HEM Method: EPA 1664A Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
SGT-Hem (oil, nonpolar)	2	5	mg/L	<MDL	

SB:WG101120-2 MB:WG101120-1 Matrix: BLANK WTR Listtype: ORSGT-HEM Method: EPA 1664A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
SGT-Hem (oil, nonpolar)	2	5	mg/L	<MDL	20	17	85		64--132

MS:WG101120-3 L47164-3 Matrix: STORM WTR Listtype: ORSGT-HEM Method: EPA 1664A Project: 421195CY
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
SGT-Hem (oil, nonpolar)	2.2	5.38	mg/L	<MDL	21.5	16	75		64--132

^ For the following parameters, the values in RPD column are Absolute Difference:

- pH
- pH, Field
- Salinity
- Salinity, Field
- sample Depth
- sample Temperature, Field

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

April 30, 2009

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195CY
Mercer Island Stormwater Monitoring,
Samples L47563-1 to 9

Attached is the comprehensive report for the water samples collected and delivered to the laboratory on March 30, 2009. The samples were analyzed in the Organics, Metals, Microbiology and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:
There were no anomalies associated with the preparation and the analysis of these samples.

Metals:
There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:
There were no anomalies associated with the preparation and the analysis of these samples.

Organics:

Oil, Non-Polar Analysis:
There were no anomalies associated with the analysis of these samples.

Herbicide Analyses:
Herbicide analysis was subcontracted to TestAmerica Tacoma. There were no anomalies associated with the analysis of these samples.

Organophosphorus Pesticides (short list) Analyses:
There were no anomalies associated with the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL06	MERCERISL10	MERCERISL26	MERCERISL32
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	FOREST AVE. AND 84	CREEK NEAR HOLLYHI
Client Loc:				
Sampled:	03/28/09 1:53:00 PM	03/28/09 2:20:00 PM	03/28/09 11:20:00 AM	03/28/09 12:15:00 PM
TimeSpan:				
Lab ID:	L47563-1	L47563-2	L47563-3	L47563-4
Matrix:	STORM WTR	STORM WTR	STORM WTR	STORM WTR
% Solids:				

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis		
COMBINED LABS																				
M=CV SM2540-D																				
Total Suspended Solids	11.4		0.5	1	mg/L	12		0.6	1.2	mg/L	61.1		1.1	2.3	mg/L	9.2		0.5	1	mg/L
M=CV SM4500-N-C																				
Total Nitrogen	0.665		0.05	0.1	mg/L	0.613		0.05	0.1	mg/L	1.25		0.05	0.1	mg/L	0.939		0.05	0.1	mg/L
M=CV SM4500-P-B,F																				
Total Phosphorus	0.0484		0.005	0.01	mg/L	0.0678		0.005	0.01	mg/L	0.116		0.005	0.01	mg/L	0.0473		0.005	0.01	mg/L
M=CV SM4500-P-F																				
Orthophosphate Phosphorus	0.0319		0.002	0.005	mg/L	0.0322		0.002	0.005	mg/L	0.0331		0.002	0.005	mg/L	0.0173		0.002	0.005	mg/L
M=ES NONE																				
Conductivity, Field	150		0.5	10	umhos/cm	134		0.5	10	umhos/cm	179		0.5	10	umhos/cm	118		0.5	10	umhos/cm
Discharge Rate of Stream	0.4		0.05	0.1	cfs	0.3		0.05	0.1	cfs	0.2		0.05	0.1	cfs	0.7		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	102.1				%	91.6				%	99.3				%	101.9				%
Dissolved Oxygen, Field	12.4		0.5	1	mg/L	10.8		0.5	1	mg/L	12.1		0.5	1	mg/L	12.4		0.5	1	mg/L
Field Personnel	JP				none	JP				none	JP				none	JP				none
pH, Field	7.74				pH	7.46				pH	7.66				pH	7.59				pH
Sample Function																				
Sample Information																				
Sample Temperature, Field	6.9				deg C	8.3				deg C	6.9				deg C	7				deg C
Turbidity, Field	6.9		0.5	2	NTU	13		0.5	2	NTU	34.1		0.5	2	NTU	10.1		0.5	2	NTU
M=MC SM 9213D 20TH																				
Escherichia coli	55				CFU/100ml	520				CFU/100ml	730				CFU/100ml	80				CFU/100ml
M=MC SM 9222D 20TH																				
Fecal Coliform	30				CFU/100ml	410				CFU/100ml	350				CFU/100ml	70				CFU/100ml
M=MT EPA 200.8*SW846 6020A																				
Calcium, Total, ICP-MS	11600		10	50	ug/L	14000		10	50	ug/L	13900		10	50	ug/L	11300		10	50	ug/L
Chromium, Dissolved, ICP-MS	0.66	<RDL	0.2	1	ug/L	0.62	<RDL	0.2	1	ug/L	2.2		0.2	1	ug/L	2.82		0.2	1	ug/L
Chromium, Total, ICP-MS																				
Copper, Dissolved, ICP-MS	2.09		0.4	2	ug/L	5.06		0.4	2	ug/L	2.41		0.4	2	ug/L	5.44		0.4	2	ug/L
Copper, Total, ICP-MS																				
Lead, Dissolved, ICP-MS		<MDL	0.1	0.5	ug/L	0.13	<RDL	0.1	0.5	ug/L		<MDL	0.1	0.5	ug/L		<MDL	0.1	0.5	ug/L
Lead, Total, ICP-MS																				
Magnesium, Total, ICP-MS	7110		10	50	ug/L	7130		10	50	ug/L	10800		10	50	ug/L	4700		10	50	ug/L
Zinc, Dissolved, ICP-MS	24.6		0.5	2.5	ug/L	20.7		0.5	2.5	ug/L	2.7		0.5	2.5	ug/L	12.1		0.5	2.5	ug/L
Zinc, Total, ICP-MS																				
M=MT EPA 200.8/SW846 6020A*SM2340B																				
Hardness, Calc	58.3		0.066	0.331	mg CaCO3/L	64.2		0.066	0.331	mg CaCO3/L	79.4		0.066	0.331	mg CaCO3/L	47.5		0.066	0.331	mg CaCO3/L
M=OR EPA 1664A																				
SGT-Hem (oil, nonpolar)		<MDL	2.2	5.56	mg/L		<MDL	2.2	5.56	mg/L		<MDL	2.2	5.62	mg/L		<MDL	2.2	5.49	mg/L
M=OR SW846 3520C*SW846 8270D																				
Chlorpyrifos		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L
Diazinon		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L
Disulfoton		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L
Malathion		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L
Parathion-Ethyl		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L
Parathion-Methyl		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL06	MERCERISL10	MERCERISL26	MERCERISL32
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	FOREST AVE. AND 84	CREEK NEAR HOLLYHI
Client Loc:				
Sampled:	03/28/09 1:53:00 PM	03/28/09 2:20:00 PM	03/28/09 11:20:00 AM	03/28/09 12:15:00 PM
TimeSpan:				
Lab ID:	L47563-1	L47563-2	L47563-3	L47563-4
Matrix:	STORM WTR	STORM WTR	STORM WTR	STORM WTR
% Solids:				

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
		-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis			
COMBINED LABS																				
Phorate		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L
M=OR SW846 3535A*SW846 8151A																				
2,4,5-T		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L
2,4,5-TP (Silvex)		<MDL	0.039	0.2	ug/L		<MDL	0.039	0.2	ug/L		<MDL	0.039	0.2	ug/L		<MDL	0.039	0.2	ug/L
2,4-D		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L
2,4-DB		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L
Dalapon		<MDL	0.08	0.4	ug/L		<MDL	0.08	0.4	ug/L		<MDL	0.08	0.4	ug/L		<MDL	0.08	0.4	ug/L
Dicamba		<MDL	0.034	0.2	ug/L		<MDL	0.034	0.2	ug/L		<MDL	0.034	0.2	ug/L		<MDL	0.034	0.2	ug/L
Dichloroprop		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L
Dinoseb		<MDL	0.027	0.2	ug/L		<MDL	0.027	0.2	ug/L		<MDL	0.027	0.2	ug/L		<MDL	0.027	0.2	ug/L
MCPA		<MDL	0.028	0.2	ug/L		<MDL	0.028	0.2	ug/L		<MDL	0.028	0.2	ug/L		<MDL	0.028	0.2	ug/L
MCPP		<MDL	0.018	0.2	ug/L		<MDL	0.018	0.2	ug/L		<MDL	0.018	0.2	ug/L		<MDL	0.018	0.2	ug/L

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL42					MERCERISL26					ATMOSBLANK					FFBLANK				
Descrip:	E. MERCER WAY					FOREST AVE. AND 84					ATMOSPHERE BLANK					FIELD FILTER BLANK				
Client Loc:																				
Sampled:	03/28/09 12:50:00 PM					03/28/09 11:29:00 AM					03/28/09 11:05:00 AM					03/28/09 11:10:00 AM				
TimeSpan:																				
Lab ID:	L47563-5					L47563-6					L47563-7					L47563-8				
Matrix:	STORM WTR					STORM WTR					BLANK WTR					BLANK WTR				
% Solids:																				
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
	-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis				
COMBINED LABS																				
M=CV SM2540-D																				
Total Suspended Solids	19.8		1	1.9	mg/L	52.5		1.3	2.5	mg/L										
M=CV SM4500-N-C																				
Total Nitrogen	0.887		0.05	0.1	mg/L	1.17		0.05	0.1	mg/L										
M=CV SM4500-P-B,F																				
Total Phosphorus	0.104		0.005	0.01	mg/L	0.117		0.005	0.01	mg/L										
M=CV SM4500-P-F																				
Orthophosphate Phosphorus	0.0498		0.002	0.005	mg/L	0.0318		0.002	0.005	mg/L										
M=ES NONE																				
Conductivity, Field	149		0.5	10	umhos/cm	177		0.5	10	umhos/cm										
Discharge Rate of Stream	0.3		0.05	0.1	cfs	0.2		0.05	0.1	cfs										
Dissolved Oxygen Saturation, Field	94.8				%	98.5				%										
Dissolved Oxygen, Field	11.7		0.5	1	mg/L	12		0.5	1	mg/L										
Field Personnel	JP				none	JP				none										
pH, Field	7.59				pH	7.65				pH										
Sample Function						FREP@L47563-3				none										
Sample Information																FFBLK METALS				none
Sample Temperature, Field	6.6				deg C	6.9				deg C										
Turbidity, Field	15.9		0.5	2	NTU	29.6		0.5	2	NTU										
M=MC SM 9213D 20TH																				
Escherichia coli	82				CFU/100ml	590				CFU/100ml										
M=MC SM 9222D 20TH																				
Fecal Coliform	90				CFU/100ml	230				CFU/100ml										
M=MT EPA 200.8*SW846 6020A																				
Calcium, Total, ICP-MS	10300		10	50	ug/L	13600		10	50	ug/L										
Chromium, Dissolved, ICP-MS	1.2		0.2	1	ug/L	2.16		0.2	1	ug/L										
Chromium, Total, ICP-MS												<MDL	0.2	1	ug/L					
Copper, Dissolved, ICP-MS	3.1		0.4	2	ug/L	2.31		0.4	2	ug/L										
Copper, Total, ICP-MS												<MDL	0.4	2	ug/L					
Lead, Dissolved, ICP-MS		<MDL	0.1	0.5	ug/L		<MDL	0.1	0.5	ug/L										
Lead, Total, ICP-MS												<MDL	0.1	0.5	ug/L					
Magnesium, Total, ICP-MS	9120		10	50	ug/L	10500		10	50	ug/L										
Zinc, Dissolved, ICP-MS	1.5	<RDL	0.5	2.5	ug/L	2.73		0.5	2.5	ug/L										
Zinc, Total, ICP-MS												<MDL	0.5	2.5	ug/L					
M=MT EPA 200.8/SW846 6020A*SM2340B																				
Hardness, Calc	63.3		0.066	0.331	mg CaCO3/L	77.4		0.066	0.331	mg CaCO3/L										
M=OR EPA 1664A																				
SGT-Hem (oil, nonpolar)		<MDL	2.2	5.49	mg/L		<MDL	2.2	5.43	mg/L										
M=OR SW846 3520C*SW846 8270D																				
Chlorpyrifos		<MDL	0.032	0.0472	ug/L		<MDL	0.032	0.0472	ug/L										
Diazinon		<MDL	0.041	0.0472	ug/L		<MDL	0.041	0.0472	ug/L										
Disulfoton		<MDL	0.025	0.0472	ug/L		<MDL	0.025	0.0472	ug/L										
Malathion		<MDL	0.045	0.0472	ug/L		<MDL	0.045	0.0472	ug/L										
Parathion-Ethyl		<MDL	0.042	0.0472	ug/L		<MDL	0.042	0.0472	ug/L										
Parathion-Methyl		<MDL	0.034	0.0472	ug/L		<MDL	0.034	0.0472	ug/L										

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL42					Locator:	MERCERISL26					Locator:	ATMOSBLANK					Locator:	FFBLANK				
Descrip:	E. MERCER WAY					Descrip:	FOREST AVE. AND 84					Descrip:	ATMOSPHERE BLANK					Descrip:	FIELD FILTER BLANK				
Client Loc:						Client Loc:						Client Loc:						Client Loc:					
Sampled:	03/28/09 12:50:00 PM					Sampled:	03/28/09 11:29:00 AM					Sampled:	03/28/09 11:05:00 AM					Sampled:	03/28/09 11:10:00 AM				
TimeSpan:						TimeSpan:						TimeSpan:						TimeSpan:					
Lab ID:	L47563-5					Lab ID:	L47563-6					Lab ID:	L47563-7					Lab ID:	L47563-8				
Matrix:	STORM WTR					Matrix:	STORM WTR					Matrix:	BLANK WTR					Matrix:	BLANK WTR				
% Solids:						% Solids:						% Solids:						% Solids:					
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
		-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis			
COMBINED LABS																				
Phorate		<MDL	0.031	0.0472	ug/L		<MDL	0.031	0.0472	ug/L										
M=OR SW846 3535A*SW846 8151A																				
2,4,5-T		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L										
2,4,5-TP (Silvex)		<MDL	0.039	0.2	ug/L		<MDL	0.039	0.2	ug/L										
2,4-D		<MDL	0.015	0.2	ug/L		<MDL	0.015	0.2	ug/L										
2,4-DB		<MDL	0.019	0.2	ug/L		<MDL	0.019	0.2	ug/L										
Dalapon		<MDL	0.08	0.4	ug/L		<MDL	0.08	0.4	ug/L										
Dicamba		<MDL	0.034	0.2	ug/L		<MDL	0.034	0.2	ug/L										
Dichloroprop		<MDL	0.035	0.2	ug/L		<MDL	0.035	0.2	ug/L										
Dinoseb		<MDL	0.027	0.2	ug/L		<MDL	0.027	0.2	ug/L										
MCPA		<MDL	0.028	0.2	ug/L		<MDL	0.028	0.2	ug/L										
MCPP		<MDL	0.018	0.2	ug/L		<MDL	0.018	0.2	ug/L										

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	FFBLANK	FFBLANK
Descrip:	FIELD FILTER BLANK	FIELD FILTER BLANK
Client Loc:		
Sampled:	03/28/09 11:10:00 AM	03/28/09 11:07:00 AM
TimeSpan:		
Lab ID:	L47563-8	L47563-9
Matrix:	FILTER WTR	BLANK WTR
% Solids:		

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
	-Wet Weight Basis					-Wet Weight Basis				
COMBINED LABS										
M=CV SM2540-D										
Total Suspended Solids										
M=CV SM4500-N-C										
Total Nitrogen										
M=CV SM4500-P-B,F										
Total Phosphorus										
M=CV SM4500-P-F										
Orthophosphate Phosphorus							<MDL	0.002	0.005	mg/L
M=ES NONE										
Conductivity, Field										
Discharge Rate of Stream										
Dissolved Oxygen Saturation, Field										
Dissolved Oxygen, Field										
Field Personnel										
pH, Field										
Sample Function										
Sample Information						FFBLK ORTHOP				none
Sample Temperature, Field										
Turbidity, Field										
M=MC SM 9213D 20TH										
Escherichia coli										
M=MC SM 9222D 20TH										
Fecal Coliform										
M=MT EPA 200.8*SW846 6020A										
Calcium, Total, ICP-MS										
Chromium, Dissolved, ICP-MS		<MDL	0.2	1	ug/L					
Chromium, Total, ICP-MS										
Copper, Dissolved, ICP-MS		<MDL	0.4	2	ug/L					
Copper, Total, ICP-MS										
Lead, Dissolved, ICP-MS		<MDL	0.1	0.5	ug/L					
Lead, Total, ICP-MS										
Magnesium, Total, ICP-MS										
Zinc, Dissolved, ICP-MS		<MDL	0.5	2.5	ug/L					
Zinc, Total, ICP-MS										
M=MT EPA 200.8/SW846 6020A*SM2340B										
Hardness, Calc										
M=OR EPA 1664A										
SGT-Hem (oil, nonpolar)										
M=OR SW846 3520C*SW846 8270D										
Chlorpyrifos										
Diazinon										
Disulfoton										
Malathion										
Parathion-Ethyl										
Parathion-Methyl										

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	FFBLANK	FFBLANK
Descrip:	FIELD FILTER BLANK	FIELD FILTER BLANK
Client Loc:		
Sampled:	03/28/09 11:10:00 AM	03/28/09 11:07:00 AM
TimeSpan:		
Lab ID:	L47563-8	L47563-9
Matrix:	FILTER WTR	BLANK WTR
% Solids:		

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
		-Wet Weight Basis					-Wet Weight Basis			
COMBINED LABS										
Phorate										
M=OR SW846 3535A*SW846 8151A										
2,4,5-T										
2,4,5-TP (Silvex)										
2,4-D										
2,4-DB										
Dalapon										
Dicamba										
Dichloroprop										
Dinoseb										
MCPA										
MCPP										

PROJECT: 421195CY

King County Environmental Lab Matrix Report

COMBINED LABS-Liquid

Locator	Sample Depth	Lab ID	Orthophosphate Phosphorus mg/L	Total Nitrogen mg/L	Total Phosphorus mg/L	Total Suspended Solids mg/L	Escherichia coli CFU/100ml	Fecal Coliform CFU/100ml	Calcium, Total, ICP-MS ug/L	Chromium, Dissolved, ICP-MS ug/L	Copper, Dissolved, ICP-MS ug/L	Hardness, Calc mg CaCO3/L	Lead, Dissolved, ICP-MS ug/L	Magnesium, Total, ICP-MS ug/L	Zinc, Dissolved, ICP-MS ug/L	Conductivity, Field umhos/cm	Discharge Rate of Stream cfs	Dissolved Oxygen Saturation, Field %	Dissolved Oxygen, Field mg/L	Sample Temperature, Field deg C	Turbidity, Field NTU	pH, Field pH
MERCERISL06		L47563-1	0.0319	0.665	0.0484	11.4	55	30	11600	0.66	2.09	58.3		7110	24.6	150	0.4	102.1	12.4	6.9	6.9	7.74
MERCERISL10		L47563-2	0.0322	0.613	0.0678	12	520	410	14000	0.62	5.06	64.2	0.13	7130	20.7	134	0.3	91.6	10.8	8.3	13	7.46
MERCERISL26		L47563-3	0.0331	1.25	0.116	61.1	730	350	13900	2.2	2.41	79.4		10800	2.7	179	0.2	99.3	12.1	6.9	34.1	7.66
MERCERISL32		L47563-4	0.0173	0.939	0.0473	9.2	80	70	11300	2.82	5.44	47.5		4700	12.1	118	0.7	101.9	12.4	7	10.1	7.59
MERCERISL42		L47563-5	0.0498	0.887	0.104	19.8	82	90	10300	1.2	3.1	63.3		9120	1.5	149	0.3	94.8	11.7	6.6	15.9	7.59
MERCERISL26		L47563-6	0.0318	1.17	0.117	52.5	590	230	13600	2.16	2.31	77.4		10500	2.73	177	0.2	98.5	12	6.9	29.6	7.65

KING COUNTY ENVIRONMENTAL LABORATORY

Analytical Text Value Report

APR 30 2009, 13:14

PROJECT:421195CY

SAMPLENUM	PARM NAME	TEXT VALUE
L47563-1	Field Personnel	JP
L47563-2	Field Personnel	JP
L47563-3	Field Personnel	JP
L47563-4	Field Personnel	JP
L47563-5	Field Personnel	JP
L47563-6	Field Personnel	JP
L47563-6	Sample Function	FREP@L47563-3
L47563-8	Sample Information	FFBLK METALS
L47563-9	Sample Information	FFBLK ORTHOP

Login Number: P47563

WLRD-MERCER ISLAND WQ STORM MONITORING

Project Number: 421195CY

Personnel: J. Power

Sample No. (Type)	P47563-1	P47563-2	P47563-3
Locator	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	
Locator Desc.	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time	28-MAR-09/1353	/1420	/1120
End Date/Time			
Time Span			AREP
Sample Depth			
Comments	Need DOT Key	North Island	84th Ave-Weyburn-West Island
COND, FIELD	150.4	134.4	179.2
DO SAT, FIELD	102.1	91.6	99.3
DO, FIELD	12.41	10.76	12.05
PERSONNEL	JP	JP	JP
PH, FIELD	7.74	7.46	7.66
SAMP TEMP	6.87	8.30	6.85
STRM FLOW	0.4 CFS	0.3 CFS	0.2 CFS
TURB, FIELD	6.92	13.0	34.1
Dept., Matrix, Prod			
	3 STORM WTR ORTHOP	3 STORM WTR ORTHOP	3 STORM WTR ORTHOP
	3 STORM WTR TOTN	3 STORM WTR TOTN	3 STORM WTR TOTN
	3 STORM WTR TOTP	3 STORM WTR TOTP	3 STORM WTR TOTP
	3 STORM WTR TSS	3 STORM WTR TSS	3 STORM WTR TSS
	5 STORM WTR EC-MF	5 STORM WTR EC-MF	5 STORM WTR EC-MF
	5 STORM WTR FC-MF	5 STORM WTR FC-MF	5 STORM WTR FC-MF
	6 STORM WTR CA-ICPMS	6 STORM WTR CA-ICPMS	6 STORM WTR CA-ICPMS
	6 STORM WTR CR-ICPMS, DISS	6 STORM WTR CR-ICPMS, DISS	6 STORM WTR CR-ICPMS, DISS

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
Jean Power	3/28/09	1535
RECEIVED BY	Date	Time
[illegible]	3/30/09	1220
Sample Number(s)		
L47563 1-9		(All)

MILKY + ? WEIRD ODOR

2 FILTERS

2 FILTERS

- MICRO ON CART IN WALK IN
- NUTRIENTS IN DOWNSTAIRS CONV FREEZER

continue ...

Login Number: P47563

WLRD-MERCER ISLAND WQ STORM MONITORING

Project Number: 421195CY

Personnel:

Sample No. (Type)	P47563-4	P47563-5	P47563-6
Locator	MERCERISL32	MERCERISL42	MERCERISL26
Short Loc. Desc.			
Locator Desc.			
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time	28-MAR-09/1215	/1250	/1129
End Date/Time			
Time Span	UP, NOT TURBID	UP, SOMEWHAT TURBID	
Sample Depth			
Comments	Holly Hill Dr-West Island	Retention Stucture-East Island	Field Rep
COND, FIELD	117.8	148.6	176.7
DO SAT, FIELD	101.9	94.8	98.5
DO, FIELD	12.37	11.66	12.02
PERSONNEL	JP	JP	JP
PH, FIELD	7.59	7.59	7.65
SAMP TEMP	6.96	6.55	6.86
STRM FLOW	0.7 CFS	0.3 CFS	0.2 CFS
TURB, FIELD	~~10.4~~ 10.1	15.9	29.6
SAMP FUNC	5 **********	5 **********	FREP@L47563-3
Dept., Matrix, Prod	3 STORM WTR ORTHOP 3 STORM WTR TOTN 3 STORM WTR TOTP 3 STORM WTR TSS 5 STORM WTR EC-MF 5 STORM WTR FC-MF	3 STORM WTR ORTHOP 3 STORM WTR TOTN 3 STORM WTR TOTP 3 STORM WTR TSS 5 STORM WTR EC-MF 5 STORM WTR FC-MF	3 STORM WTR ORTHOP 3 STORM WTR TOTN 3 STORM WTR TOTP 3 STORM WTR TSS 5 STORM WTR EC-MF 5 STORM WTR FC-MF
	2 FILTERS	1 FILTER	2 FILTERS

NOT RAINING
WATER LEVEL
DOWN ~ 1/2 H
WHILE SAMPLING.

continue ...

WLRD-MERCER ISLAND WQ STORM MONITORING

Project Number: 421195CY

Personnel: _____

Sample No. (Type)	P47563-7(ATB)	P47563-8(FFB)	P47563-9(FFB)
Locator	ATMOSBLANK	FFBLANK	FFBLANK
Short Loc. Desc.	ATMOSBLANK	FFBLAN K	FFBLAN K
Locator Desc.	ATMOSPHERE BLANK	FIELD FILTER BLANK	FIELD FILTER BLANK
Site	METRO	METRO	METRO
Start Date/Time	28-MAR-09 / 1105	/ 1110	/ 1107
End Date/Time			
Time Span			
Sample Depth			
Comments	field blank (metals)	Field filter blank Metals	Field filter blank OrthoP
SAMP INFO	**********	FFBLK - METALS	FFBLK - ORTHOP
Dept., Matrix, Prod			
	6 BLANK WTR CR-ICPMS	6 FILTER WTR CR-ICPMS, DISS	3 BLANK WTR ORTHOP
	6 BLANK WTR CU-ICPMS	6 FILTER WTR CU-ICPMS, DISS	
	6 BLANK WTR PB-ICPMS	6 FILTER WTR PB-ICPMS, DISS	
	6 BLANK WTR ZN-ICPMS	6 FILTER WTR ZN-ICPMS, DISS	

End of Fieldsheet.

King County Environmental Lab Batch Report

WG101273 Orthophosphate

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	STORM WTR	3/28/2009 13:53	3/30/2009 11:15	3/30/2009 12:46		
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	STORM WTR	3/28/2009 14:20	3/30/2009 11:15	3/30/2009 12:48		
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	STORM WTR	3/28/2009 11:20	3/30/2009 11:15	3/30/2009 12:50		
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	STORM WTR	3/28/2009 12:15	3/30/2009 11:15	3/30/2009 13:00		
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	STORM WTR	3/28/2009 12:50	3/30/2009 11:15	3/30/2009 13:02		
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	STORM WTR	3/28/2009 11:29	3/30/2009 11:15	3/30/2009 13:04	WG101273-1, -2, -4, -5, -3	FREP@L47563-3
L47563-9	421195CY	WLRD-MercerIS. WQ Monitoring	CVORTHOP	BLANK WTR	3/28/2009 11:07	3/30/2009 11:15	3/30/2009 13:13		
WG101273-1	MB		CVORTHOP	BLANK WTR		3/30/2009 11:15	3/30/2009 12:35		MB1 03/30/09
WG101273-2	SB		CVORTHOP	BLANK WTR		3/30/2009 11:15	3/30/2009 12:37		WG101273-1
WG101273-3	LCS		CVORTHOP	BLANK WTR		3/30/2009 13:15	3/30/2009 13:15		LEVEL1
WG101273-4	LD		CVORTHOP	STORM WTR		3/30/2009 11:15	3/30/2009 13:06		L47563-6
WG101273-5	MS		CVORTHOP	STORM WTR		3/30/2009 11:15	3/30/2009 13:08		L47563-6

King County Environmental Lab Analytical QC Report

Workgroup: WG101273 Orthophosphate

MB:WG101273-1 Matrix: BLANK WTR Listtype: CVORTHOP Method: SM4500-P-F Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	

SB:WG101273-2 MB:WG101273-1 Matrix: BLANK WTR Listtype: CVORTHOP Method: SM4500-P-F Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Orthophosphate Phosphorus	0.002	0.005	mg/L	<MDL	0.04	0.0408	102		80--120

LCS:WG101273-3 Matrix: BLANK WTR Listtype: CVORTHOP Method: SM4500-P-F Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.04	0.0413	103		85--115

LD:WG101273-4 L47563-6 Matrix: STORM WTR Listtype: CVORTHOP Method: SM4500-P-F Project: 421195CY
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.0318	0.0312	2		20

MS:WG101273-5 L47563-6 Matrix: STORM WTR Listtype: CVORTHOP Method: SM4500-P-F Project: 421195CY
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Orthophosphate Phosphorus	0.002	0.005	mg/L	0.0318	0.04	0.0706	97		75--125

King County Environmental Lab Batch Report

WG101329 Total Nutrients

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47162-1	421195CS	Beaver Lake - Streams/Storms	CVTOTP	STORM WTR	3/25/2009 5:05	4/1/2009 11:15	4/2/2009 11:06		
L47162-2	421195CS	Beaver Lake - Streams/Storms	CVTOTP	STORM WTR	3/25/2009 2:09	4/1/2009 11:15	4/2/2009 11:30		
L47377-1	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTOTP	FRESH WTR	3/31/2009 7:45	4/1/2009 11:15	4/2/2009 11:09		
L47377-2	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTOTP	FRESH WTR	3/31/2009 8:30	4/1/2009 11:15	4/2/2009 11:11		
L47377-3	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTOTP	FRESH WTR	3/31/2009 8:55	4/1/2009 11:15	4/2/2009 11:12		
L47377-4	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTOTP	FRESH WTR	3/31/2009 9:10	4/1/2009 11:15	4/2/2009 11:14		
L47377-5	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTOTP	FRESH WTR	3/31/2009 10:05	4/1/2009 11:15	4/2/2009 11:33		
L47377-6	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTOTP	FRESH WTR	3/31/2009 10:35	4/1/2009 11:15	4/2/2009 12:06		
L47377-7	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTOTP	FRESH WTR	3/31/2009 10:45	4/1/2009 11:15	4/2/2009 11:27		
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	CVTOTP	STORM WTR	3/28/2009 13:53	4/1/2009 11:15	4/2/2009 10:48		
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	CVTOTP	STORM WTR	3/28/2009 14:20	4/1/2009 11:15	4/2/2009 10:50		
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	CVTOTP	STORM WTR	3/28/2009 11:20	4/1/2009 11:15	4/2/2009 10:51	WG101329-1, -2, -3, -4, -5, -6, -7	
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	CVTOTP	STORM WTR	3/28/2009 12:15	4/1/2009 11:15	4/2/2009 12:02		
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	CVTOTP	STORM WTR	3/28/2009 12:50	4/1/2009 11:15	4/2/2009 10:54		
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	CVTOTP	STORM WTR	3/28/2009 11:29	4/1/2009 11:15	4/2/2009 11:29		FREP@L47563-3
WG101329-1	MB		CVTOTP	BLANK WTR		4/1/2009 11:15	4/2/2009 10:44		MB1 04/01/09 11:15
WG101329-2	SB		CVTOTP	BLANK WTR		4/1/2009 11:15	4/2/2009 10:45		WG101329-1
WG101329-3	LCS		CVTOTP	BLANK WTR		4/1/2009 11:15	4/2/2009 10:47		LEVEL1
WG101329-4	LD		CVTOTP	FRESH WTR		4/1/2009 11:15	4/2/2009 11:32		L47377-4
WG101329-5	MS		CVTOTP	FRESH WTR		4/1/2009 11:15	4/2/2009 12:00		L47377-4
WG101329-6	LD		CVTOTP	STORM WTR		4/1/2009 11:15	4/2/2009 12:03		L47563-6
WG101329-7	MS		CVTOTP	STORM WTR		4/1/2009 11:15	4/2/2009 12:05		L47563-6

King County Environmental Lab Analytical QC Report

Workgroup: WG101329 Total Nutrients

MB:WG101329-1 Matrix: BLANK WTR Listtype: CVTOTN Method: SM4500-N-C Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Nitrogen	0.05	0.1	mg/L	<MDL	

MB:WG101329-1 Matrix: BLANK WTR Listtype: CVTOTP Method: SM4500-P-B,F Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Phosphorus	0.005	0.01	mg/L	<MDL	

SB:WG101329-2 MB:WG101329-1 Matrix: BLANK WTR Listtype: CVTOTN Method: SM4500-N-C Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	<MDL	1	0.98	98		80--120

SB:WG101329-2 MB:WG101329-1 Matrix: BLANK WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	<MDL	0.1	0.099	99		80--120

LCS:WG101329-3 Matrix: BLANK WTR Listtype: CVTOTN Method: SM4500-N-C Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1	0.932	93		85--115

LCS:WG101329-3 Matrix: BLANK WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.1	0.0899	90		85--115

King County Environmental Lab Analytical QC Report

LD:WG101329-4 L47377-4 Matrix: FRESH WTR Listtype: CVTOTN Method: SM4500-N-C Project: 421874-100
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1.16	1.09	6		20

LD:WG101329-4 L47377-4 Matrix: FRESH WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: 421874-100
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.0439	0.0391	12		20

MS:WG101329-5 L47377-4 Matrix: FRESH WTR Listtype: CVTOTN Method: SM4500-N-C Project: 421874-100
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1.16	1	2.05	90		75--125

MS:WG101329-5 L47377-4 Matrix: FRESH WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: 421874-100
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.0439	0.1	0.138	94		75--125

LD:WG101329-6 L47563-6 Matrix: STORM WTR Listtype: CVTOTN Method: SM4500-N-C Project: 421195CY
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1.17	1.07	9		20

LD:WG101329-6 L47563-6 Matrix: STORM WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: 421195CY
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.117	0.101	15		20

MS:WG101329-7 L47563-6 Matrix: STORM WTR Listtype: CVTOTN Method: SM4500-N-C Project: 421195CY
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Nitrogen	0.05	0.1	mg/L	1.17	1	1.97	80		75--125

King County Environmental Lab Analytical QC Report

MS:WG101329-7 L47563-6 Matrix: STORM WTR Listtype: CVTOTP Method: SM4500-P-B,F Project: 421195CY
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Total Phosphorus	0.005	0.01	mg/L	0.117	0.1	0.203	87		75--125

King County Environmental Lab Batch Report

WG101351 Total Suspended Solids

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L46981-1	421195AM	Cottage Lake	CVTSS	STORM WTR	4/2/2009 11:45	4/3/2009 9:30	4/6/2009 16:36		
L46981-2	421195AM	Cottage Lake	CVTSS	STORM WTR	4/2/2009 10:30	4/3/2009 9:30	4/6/2009 16:37		
L46981-3	421195AM	Cottage Lake	CVTSS	STORM WTR	4/2/2009 10:08	4/3/2009 9:30	4/6/2009 16:38		
L46981-4	421195AM	Cottage Lake	CVTSS	STORM WTR	4/2/2009 9:52	4/3/2009 9:30	4/6/2009 16:38		
L47377-1	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	3/31/2009 7:45	4/3/2009 9:30	4/6/2009 16:39		
L47377-2	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	3/31/2009 8:30	4/3/2009 9:30	4/6/2009 16:40		
L47377-3	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	3/31/2009 8:55	4/3/2009 9:30	4/6/2009 16:41		
L47377-4	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	3/31/2009 9:10	4/3/2009 9:30	4/6/2009 16:42		
L47377-5	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	3/31/2009 10:05	4/3/2009 9:30	4/6/2009 16:43		
L47377-6	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	3/31/2009 10:35	4/3/2009 9:30	4/6/2009 16:44		
L47377-7	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	3/31/2009 10:45	4/3/2009 9:30	4/6/2009 16:44		
L47552-1	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 0:00	4/3/2009 9:30	4/6/2009 16:45		
L47552-2	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 12:57	4/3/2009 9:30	4/6/2009 16:46		
L47552-3	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 0:00	4/3/2009 9:30	4/6/2009 16:46		
L47552-4	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 13:05	4/3/2009 9:30	4/6/2009 16:47		
L47552-5	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 13:22	4/3/2009 9:30	4/6/2009 16:47		
L47552-6	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 13:14	4/3/2009 9:30	4/6/2009 16:48		
L47552-7	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 0:00	4/3/2009 9:30	4/6/2009 16:48		
L47552-8	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 0:00	4/3/2009 9:30	4/6/2009 16:49		
L47552-9	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 0:00	4/3/2009 9:30	4/6/2009 16:50	WG101351-1, -2, -3, -4, -5, -6, -7	
L47552-10	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 0:00	4/3/2009 9:30	4/6/2009 16:52		
L47552-11	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 0:00	4/3/2009 9:30	4/6/2009 16:53		
L47552-12	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 0:00	4/3/2009 9:30	4/6/2009 16:53		
L47552-13	421195EH	White Center Stormwater Improvements Grant	CVTSS	STORM WTR	4/1/2009 0:00	4/3/2009 9:30	4/6/2009 16:54		
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	CVTSS	STORM WTR	3/28/2009 13:53	4/3/2009 9:30	4/6/2009 16:55		
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	CVTSS	STORM WTR	3/28/2009 14:20	4/3/2009 9:30	4/6/2009 16:55		
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	CVTSS	STORM WTR	3/28/2009 11:20	4/3/2009 9:30	4/6/2009 16:56		
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	CVTSS	STORM WTR	3/28/2009 12:15	4/3/2009 9:30	4/6/2009 16:56		
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	CVTSS	STORM WTR	3/28/2009 12:50	4/3/2009 9:30	4/6/2009 16:57		
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	CVTSS	STORM WTR	3/28/2009 11:29	4/3/2009 9:30	4/6/2009 16:57		FREP@L47563-3
L47735-1	421195CS	Beaver Lake - Streams/Storms	CVTSS	STORM WTR	4/1/2009 23:54	4/3/2009 9:30	4/6/2009 16:58		
L47735-2	421195CS	Beaver Lake - Streams/Storms	CVTSS	STORM WTR	4/1/2009 18:24	4/3/2009 9:30	4/6/2009 16:59		
WG101351-1	MB		CVTSS	BLANK WTR		4/3/2009 9:30	4/6/2009 16:34		MB1 090403
WG101351-2	LCS		CVTSS	BLANK WTR		4/3/2009 9:30	4/6/2009 16:34		LEVEL1
WG101351-3	LD		CVTSS	STORM WTR		4/3/2009 9:30	4/6/2009 16:36		L46981-1
WG101351-4	LD		CVTSS	FRESH WTR		4/3/2009 9:30	4/6/2009 16:41		L47377-2
WG101351-5	MB		CVTSS	BLANK WTR		4/3/2009 9:30	4/6/2009 16:50		MB2 090403
WG101351-6	LCS		CVTSS	BLANK WTR		4/3/2009 9:30	4/6/2009 16:51		LEVEL1
WG101351-7	LD		CVTSS	STORM WTR		4/3/2009 9:30	4/6/2009 16:52		L47552-10

King County Environmental Lab Analytical QC Report

Workgroup: WG101351 Total Suspended Solids

MB:WG101351-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG101351-2 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	82	82		80--120

LD:WG101351-3 L46981-1 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421195AM
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	1.9	mg/L	31.5	31.5	0		25

LD:WG101351-4 L47377-2 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421874-100
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	1.9	mg/L	1.7	1.7			25

MB:WG101351-5 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG101351-6 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	88	88		80--120

King County Environmental Lab Analytical QC Report

LD:WG101351-7 L47552-10 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421195EH
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	0.5	1	mg/L	2.5	2.6	4		25

King County Environmental Lab Batch Report

WG101521 Field Measurements

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	ESS-FIELDMETER	STORM WTR	3/28/2009 13:53				
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	STORM WTR	3/28/2009 13:53				
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	STORM WTR	3/28/2009 14:20				
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	ESS-FIELDMETER	STORM WTR	3/28/2009 14:20				
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	STORM WTR	3/28/2009 11:20				
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	ESS-FIELDMETER	STORM WTR	3/28/2009 11:20				
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	STORM WTR	3/28/2009 12:15				
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	ESS-FIELDMETER	STORM WTR	3/28/2009 12:15				
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	ESS-FIELDMETER	STORM WTR	3/28/2009 12:50			WG101521-2, -3, -4, -5	
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	STORM WTR	3/28/2009 12:50				
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	ESS-FIELDMETER	STORM WTR	3/28/2009 11:29				FREP@L47563-3
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	STORM WTR	3/28/2009 11:29				FREP@L47563-3
L47563-8	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	BLANK WTR	3/28/2009 11:10				
L47563-9	421195CY	WLRD-MercerIS. WQ Monitoring	ESS	BLANK WTR	3/28/2009 11:07				
WG101521-2	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG101521-3	FREP		ESS-FIELDMETER	STORM WTR					L47563-3 RANGE1
WG101521-4	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG101521-5	CS		ESS-FIELDMETER	BLANK WTR					RANGE1

King County Environmental Lab Analytical QC Report

Workgroup: WG101521 Field Measurements

CS:WG101521-2 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	74.1	100		90--110
Turbidity, Field	0.5	2	NTU	5.3	5.3	99		80--120
pH, Field			pH	6.86	6.84	0.02		0--.2

FREP:WG101521-3 L47563-3 Matrix: STORM WTR Listtype: ESS-FIELDMETER Method: NONE Project: 421195CY
(Field Replicate)

Parameter	MDL	RDL	Units	Samp Value	EP Value	RPD^	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	179	177	1		10
Dissolved Oxygen, Field	0.5	1	mg/L	12.1	12	0		20
Sample Temperature, Field			deg C	6.9	6.9	0.01		0.3
Turbidity, Field	0.5	2	NTU	34.1	29.6	14		20
pH, Field			pH	7.66	7.65	0.01		0.2

CS:WG101521-4 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	74.4	101		90--110
pH, Field			pH	6.86	6.9	0.04		0--.2

CS:WG101521-5 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	74	100		90--110
Dissolved Oxygen Saturation, Field			%	100	104	104		96--104
Turbidity, Field	0.5	2	NTU	5.3	5.3	100		80--120
pH, Field			pH	6.86	6.92	0.06		0--.2

King County Environmental Lab Batch Report

WG101265 E. coli

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	MCEC-MF	STORM WTR	3/28/2009 13:53		3/30/2009 10:10	WG101265-1, -2, -3, WG101264-4, -5	
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	MCEC-MF	STORM WTR	3/28/2009 14:20		3/30/2009 10:10		
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	MCEC-MF	STORM WTR	3/28/2009 11:20		3/30/2009 10:10		
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	MCEC-MF	STORM WTR	3/28/2009 12:15		3/30/2009 10:10		
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	MCEC-MF	STORM WTR	3/28/2009 12:50		3/30/2009 10:10		
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	MCEC-MF	STORM WTR	3/28/2009 11:29		3/30/2009 10:10		FREP@L47563-3
WG101265-1	LD		MCEC-MF	STORM WTR			3/30/2009 10:10		L47563-2
WG101265-2	PC		MCEC-MF	STORM WTR			3/30/2009 10:10		QC-PERFORMED:28-MAR-09
WG101265-3	NC		MCEC-MF	STORM WTR			3/30/2009 10:10		QC-PERFORMED:28-MAR-09
WG101264-4	BF		MCFC-MF	BLANK WTR		3/29/2009 10:20	3/30/2009 10:08		QC-PERFORMED:28-MAR-09
WG101264-5	AF		MCFC-MF	BLANK WTR		3/29/2009 10:20	3/30/2009 10:08		QC-PERFORMED:28-MAR-09

King County Environmental Lab Analytical QC Report

Workgroup: WG101265 E. coli

LD:WG101265-1 L47563-2 Matrix: STORM WTR Listtype: MCEC-MF Method: SM 9213D 20TH Project: 421195CY
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	Rlog	P value	Qual
Escherichia coli			CFU/100ml	520	500	0.02	0.25	N4

PC:WG101265-2 Matrix: STORM WTR Listtype: MCEC-MF Method: SM 9213D 20TH Project:
(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Escherichia coli			CFU/100ml		PASS

NC:WG101265-3 Matrix: STORM WTR Listtype: MCEC-MF Method: SM 9213D 20TH Project:
(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Escherichia coli			CFU/100ml		PASS

BF:WG101264-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG101264-5 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

King County Environmental Lab Batch Report

WG101264 Fecal coliform

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	MCFC-MF	STORM WTR	3/28/2009 13:53	3/29/2009 10:20	3/30/2009 10:08		
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	MCFC-MF	STORM WTR	3/28/2009 14:20	3/29/2009 10:20	3/30/2009 10:08		
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	MCFC-MF	STORM WTR	3/28/2009 11:20	3/29/2009 10:20	3/30/2009 10:08		
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	MCFC-MF	STORM WTR	3/28/2009 12:15	3/29/2009 10:20	3/30/2009 10:08		
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	MCFC-MF	STORM WTR	3/28/2009 12:50	3/29/2009 10:20	3/30/2009 10:08		
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	MCFC-MF	STORM WTR	3/28/2009 11:29	3/29/2009 10:20	3/30/2009 10:08		FREP@L47563-3
WG101264-1	LD		MCFC-MF	STORM WTR		3/29/2009 10:20	3/30/2009 10:08	WG101264-1, -2, -3, -4, -5	L47563-2
WG101264-2	PC		MCFC-MF	BLANK WTR		3/29/2009 10:20	3/30/2009 10:08		QC-PERFORMED:28-MAR-09
WG101264-3	NC		MCFC-MF	BLANK WTR		3/29/2009 10:20	3/30/2009 10:08		QC-PERFORMED:28-MAR-09
WG101264-4	BF		MCFC-MF	BLANK WTR		3/29/2009 10:20	3/30/2009 10:08		QC-PERFORMED:28-MAR-09
WG101264-5	AF		MCFC-MF	BLANK WTR		3/29/2009 10:20	3/30/2009 10:08		QC-PERFORMED:28-MAR-09

King County Environmental Lab Analytical QC Report

Workgroup: WG101264 Fecal coliform

LD:WG101264-1 L47563-2 Matrix: STORM WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: 421195CY
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	Rlog	P value	Qual
Fecal Coliform			CFU/100ml	410	470	0.06	0.65	N4

PC:WG101264-2 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG101264-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG101264-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG101264-5 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

King County Environmental Lab Batch Report

WG101320 Total Metals & Hardness

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L46941-1	421196AV	KCRM - UST GROUNDWATER	MTICPMS	GRND WTR	3/24/2009 11:58	4/2/2009 7:00	4/3/2009 10:58		
L46941-2	421196AV	KCRM - UST GROUNDWATER	MTICPMS	GRND WTR	3/24/2009 14:52	4/2/2009 7:00	4/3/2009 11:03		
L46941-3	421196AV	KCRM - UST GROUNDWATER	MTICPMS	GRND WTR	3/24/2009 13:24	4/2/2009 7:00	4/3/2009 11:09		
L46941-4	421196AV	KCRM - UST GROUNDWATER	MTICPMS	GRND WTR	3/24/2009 10:24	4/2/2009 7:00	4/3/2009 11:15		
L46941-5	421196AV	KCRM - UST GROUNDWATER	MTICPMS	GRND WTR	3/24/2009 16:04	4/2/2009 7:00	4/3/2009 11:20		
L47164-1	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/14/2009 12:08	4/2/2009 7:00	4/6/2009 13:06		
L47164-2	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/14/2009 12:42	4/2/2009 7:00	4/6/2009 13:06		
L47164-3	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/14/2009 9:34	4/2/2009 7:00	4/6/2009 13:06		
L47164-4	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/14/2009 10:28	4/2/2009 7:00	4/6/2009 13:06		
L47164-5	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/14/2009 11:15	4/2/2009 7:00	4/6/2009 13:06		
L47164-6	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/14/2009 12:51	4/2/2009 7:00	4/6/2009 13:06		FREP@L47164-2
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/28/2009 13:53	4/2/2009 7:00	4/6/2009 13:06	WG101320-1, -2, -3, -4	
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/28/2009 14:20	4/2/2009 7:00	4/6/2009 13:06		
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/28/2009 11:20	4/2/2009 7:00	4/6/2009 13:06		
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/28/2009 12:15	4/2/2009 7:00	4/6/2009 13:06		
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/28/2009 12:50	4/2/2009 7:00	4/6/2009 13:06		
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	MTHARD-ICPMS	STORM WTR	3/28/2009 11:29	4/2/2009 7:00	4/6/2009 13:06		FREP@L47563-3
L47628-1	423582-000-2	Kent Auburn Conveyance System Improvement	MTHARD-ICPMS	GRND WTR	3/26/2009 13:36	4/2/2009 7:00	4/6/2009 13:06		
L47673-1	421169	QA/QC	MTICPMS	FRESH WTR	3/25/2009 0:00	4/2/2009 7:00	4/3/2009 13:19		
WG101320-1	MB		MTHARD-ICPMS	BLANK WTR		4/2/2009 7:00	4/6/2009 13:06		METHOD BLANK
WG101320-2	SB		MTHARD-ICPMS	BLANK WTR		4/2/2009 7:00	4/6/2009 13:06		WG101320-1 MS-20
WG101320-3	LD		MTHARD-ICPMS	GRND WTR		4/2/2009 7:00	4/6/2009 13:06		L47628-1 RPD-LIQ
WG101320-4	MS		MTHARD-ICPMS	GRND WTR		4/2/2009 7:00	4/6/2009 13:06		L47628-1 MS-20

King County Environmental Lab Analytical QC Report

Workgroup: WG101320 Total Metals & Hardness

MB:WG101320-1 Matrix: BLANK WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Hardness, Calc	0.066	0.331	mg CaCO3/L	<MDL	

MB:WG101320-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Barium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Calcium, Total, ICP-MS	10	50	ug/L	<MDL	
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Magnesium, Total, ICP-MS	10	50	ug/L	<MDL	
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	

SB:WG101320-2 MB:WG101320-1 Matrix: BLANK WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	<MDL	33.1	32.4	98		85--115

SB:WG101320-2 MB:WG101320-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.7	99		85--115
Barium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.4	97		85--115
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.2	101		85--115
Calcium, Total, ICP-MS	10	50	ug/L	<MDL	5000	4740	95		85--115
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	20.3	102		85--115
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.2	96		85--115
Magnesium, Total, ICP-MS	10	50	ug/L	<MDL	5000	5000	100		85--115
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.5	102		85--115
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	21	105		85--115

King County Environmental Lab Analytical QC Report

LD:WG101320-3 L47628-1 Matrix: GRND WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 423582-000-2
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	140	141	1		20

LD:WG101320-3 L47628-1 Matrix: GRND WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 423582-000-2
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	0.41	0.42			20
Barium, Total, ICP-MS	0.05	0.25	ug/L	25.2	25.5	1		20
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Calcium, Total, ICP-MS	10	50	ug/L	36100	36400	1		20
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	<MDL			20
Lead, Total, ICP-MS	0.1	0.5	ug/L	0.1	0.1			20
Magnesium, Total, ICP-MS	10	50	ug/L	12100	12200	1		20
Selenium, Total, ICP-MS	0.5	2.5	ug/L	0.77	0.83			20
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20

MS:WG101320-4 L47628-1 Matrix: GRND WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 423582-000-2
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	140	33.1	172			(No MS/MSD %Rec. due to 4x rule)

King County Environmental Lab Analytical QC Report

MS:WG101320-4 L47628-1 Matrix: GRND WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 423582-000-2
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	0.41	20	20.2	99		75--125
Barium, Total, ICP-MS	0.05	0.25	ug/L	25.2	20	45.7	102		75--125
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.3	96		75--125
Calcium, Total, ICP-MS	10	50	ug/L	36100	5000	40600			(No MS/MSD %Rec. due to 4x rule)
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	21.8	109		75--125
Lead, Total, ICP-MS	0.1	0.5	ug/L	0.1	20	18.4	91		75--125
Magnesium, Total, ICP-MS	10	50	ug/L	12100	5000	17200	103		75--125
Selenium, Total, ICP-MS	0.5	2.5	ug/L	0.77	20	19.7	94		75--125
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.5	103		75--125

WG101665 Dissolved Metals

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47285-1	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/16/2009 7:55	4/20/2009 14:00	4/20/2009 16:02		
L47699-4	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/13/2009 9:00	4/20/2009 14:00	4/20/2009 17:04		
L47699-5	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/13/2009 11:15	4/20/2009 14:00	4/20/2009 17:23		
L47737-1	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/13/2009 7:05	4/20/2009 14:00	4/20/2009 17:29		
L47737-2	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/13/2009 9:00	4/20/2009 14:00	4/20/2009 17:35		
L47737-4	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/13/2009 7:50	4/20/2009 14:00	4/20/2009 17:41		
L47737-5	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/14/2009 11:30	4/20/2009 14:00	4/20/2009 17:47		
L47738-1	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/14/2009 7:40	4/20/2009 14:00	4/20/2009 17:54		
L47738-2	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/14/2009 6:40	4/20/2009 14:00	4/20/2009 18:00		
L47738-4	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/14/2009 9:35	4/20/2009 14:00	4/20/2009 18:17		
L47738-5	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/14/2009 6:50	4/20/2009 14:00	4/20/2009 18:23		
L47738-6	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/14/2009 6:30	4/20/2009 14:00	4/20/2009 18:30		
L47738-8	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	4/14/2009 8:30	4/20/2009 14:00	4/20/2009 18:36	WG101665-1, -2, -3, -4	
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	STORM WTR	3/28/2009 13:53	4/20/2009 14:00	4/20/2009 16:08		
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	STORM WTR	3/28/2009 14:20	4/20/2009 14:00	4/20/2009 16:14		
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	STORM WTR	3/28/2009 11:20	4/20/2009 14:00	4/20/2009 16:20		
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	STORM WTR	3/28/2009 12:15	4/20/2009 14:00	4/20/2009 16:27		
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	STORM WTR	3/28/2009 12:50	4/20/2009 14:00	4/20/2009 16:33		
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	STORM WTR	3/28/2009 11:29	4/20/2009 14:00	4/20/2009 16:39		FREP@L47563-3
L47563-8	421195CY	WLRD-MercerIS. WQ Monitoring	MTICPMS-DISS	FILTER WTR	3/28/2009 11:10	4/20/2009 14:00	4/20/2009 16:45		
WG101665-1	MB		MTICPMS-DISS	BLANK WTR		4/20/2009 14:00	4/20/2009 15:49		METHOD BLANK
WG101665-2	SB		MTICPMS-DISS	BLANK WTR		4/20/2009 14:00	4/20/2009 15:56		WG101665-1 MS-20 SPK BLK
WG101665-3	LD		MTICPMS-DISS	GRND WTR		4/20/2009 14:00	4/20/2009 17:10		L47699-4 RPD-LIQ LAB DUP
WG101665-4	MS		MTICPMS-DISS	GRND WTR		4/20/2009 14:00	4/20/2009 17:16		L47699-4 MS-20 MAT SPK

King County Environmental Lab Analytical QC Report

Workgroup: WG101665 Dissolved Metals

MB:WG101665-1 Matrix: BLANK WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Potassium, Dissolved, ICP-MS	100	500	ug/L	<MDL	
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Sodium, Dissolved, ICP-MS	20	100	ug/L	<MDL	
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	

King County Environmental Lab Analytical QC Report

SB:WG101665-2 MB:WG101665-1 Matrix: BLANK WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	20	18.7	94		85--115
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.5	93		85--115
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	18.9	94		85--115
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.8	99		85--115
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.2	101		85--115
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4740	95		85--115
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	20	18.4	92		85--115
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	18.9	94		85--115
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	20	20.4	102		85--115
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4990	100		85--115
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.2	91		85--115
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4660	93		85--115
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.8	94		85--115
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.6	93		85--115
Potassium, Dissolved, ICP-MS	100	500	ug/L	<MDL	5000	4600	92		85--115
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.4	102		85--115
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.8	99		85--115
Sodium, Dissolved, ICP-MS	20	100	ug/L	<MDL	5000	4650	93		85--115
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	20	18.8	94		85--115
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	20	18	90		85--115
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.7	104		85--115

King County Environmental Lab Analytical QC Report

LD:WG101665-3 L47699-4 Matrix: GRND WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421422-CHGW
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	<MDL			20
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	<MDL			20
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	<MDL			20
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	<MDL			20
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	<MDL			20
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	<MDL			20
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	0.28	0.28			20
Potassium, Dissolved, ICP-MS	100	500	ug/L	<MDL	<MDL			20
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Sodium, Dissolved, ICP-MS	20	100	ug/L	<MDL	<MDL			20
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	<MDL			20
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	<MDL			20
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	0.9	0.9			20

King County Environmental Lab Analytical QC Report

MS:WG101665-4 L47699-4 Matrix: GRND WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421422-CHGW
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	20	18.9	95		75--125
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.9	100		75--125
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19	95		75--125
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.9	100		75--125
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.4	102		75--125
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4810	96		75--125
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	20	19.7	99		75--125
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.2	96		75--125
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	20	21.9	109		75--125
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	5040	101		75--125
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.3	91		75--125
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4770	95		75--125
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.3	96		75--125
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	0.28	20	20.3	100		75--125
Potassium, Dissolved, ICP-MS	100	500	ug/L	<MDL	5000	4880	98		75--125
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.6	103		75--125
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.9	100		75--125
Sodium, Dissolved, ICP-MS	20	100	ug/L	<MDL	5000	4740	95		75--125
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	20	19.1	95		75--125
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	20	19.3	96		75--125
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	0.9	20	22	106		75--125

King County Environmental Lab Batch Report

WG101893 Chlorinated Herbicides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	ORHERB	STORM WTR	3/28/2009 13:53	4/9/2001 11:11			
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	ORHERB	STORM WTR	3/28/2009 14:20	4/9/2001 11:11			
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	ORHERB	STORM WTR	3/28/2009 11:20	4/9/2001 11:11			
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	ORHERB	STORM WTR	3/28/2009 12:15	4/9/2001 11:11			
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	ORHERB	STORM WTR	3/28/2009 12:50	4/9/2001 11:11			
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	ORHERB	STORM WTR	3/28/2009 11:29	4/9/2001 11:11			FREP@L47563-3

King County Environmental Lab Analytical QC Report

Workgroup: WG101893 Chlorinated Herbicides
(QC data from the subcontractor is attached)

SAMPLE SUMMARY

Client: King County Environmental Laboratory

Job Number: 580-13230-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
580-13230-1	P47563-1	Water	03/28/2009 0000	04/01/2009 1300
580-13230-2	P47563-2	Water	03/28/2009 0000	04/01/2009 1300
580-13230-2MS	P47563-2	Water	03/28/2009 0000	04/01/2009 1300
580-13230-2MSD	P47563-2	Water	03/28/2009 0000	04/01/2009 1300
580-13230-3	P47563-3	Water	03/28/2009 0000	04/01/2009 1300
580-13230-4	P47563-4	Water	03/28/2009 0000	04/01/2009 1300
580-13230-5	P47563-5	Water	03/28/2009 0000	04/01/2009 1300
580-13230-6	P47563-6	Water	03/28/2009 0000	04/01/2009 1300

Client: King County Environmental Laboratory

Job Number: 580-13230-1

Method Blank - Batch: 580-42134

Method: 8151A
Preparation: 8151A

Lab Sample ID: MB 580-42134/1-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 04/06/2009 2256
Date Prepared: 04/02/2009 1305

Analysis Batch: 580-42245
Prep Batch: 580-42134
Units: ug/L

Instrument ID: TAC008
Lab File ID: L30998.d
Initial Weight/Volume: 100 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Result	Qual	MDL	RL
Dalapon	ND		0.10	0.50
Dicamba	ND		0.042	0.25
Mecoprop	ND		0.023	0.25
MCPA	ND		0.035	0.25
Dichlorprop	ND		0.044	0.25
2,4-D	ND		0.019	0.25
Silvex (2,4,5-TP)	ND		0.049	0.25
2,4,5-T	ND		0.044	0.25
Dinoseb	ND		0.034	0.25
2,4-DB	ND		0.024	0.25

Surrogate	% Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	83	40 - 135

Lab Control Spike - Batch: 580-42134

Method: 8151A
Preparation: 8151A

Lab Sample ID: LCS 580-42134/2-A
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 04/06/2009 2321
Date Prepared: 04/02/2009 1305

Analysis Batch: 580-42245
Prep Batch: 580-42134
Units: ug/L

Instrument ID: TAC008
Lab File ID: L30999.d
Initial Weight/Volume: 100 mL
Final Weight/Volume: 1 mL
Injection Volume: 1 uL

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Dalapon	10.0	8.58	86	16 - 103	
Dicamba	10.0	10.0	100	51 - 125	
Mecoprop	10.0	11.9	119	57 - 139	
MCPA	10.0	9.28	93	60 - 145	
Dichlorprop	10.0	11.3	113	70 - 120	
2,4-D	10.0	11.1	111	42 - 128	
Silvex (2,4,5-TP)	10.0	9.66	97	63 - 119	
2,4,5-T	10.0	9.70	97	35 - 110	
Dinoseb	10.0	11.1	111	17 - 153	
2,4-DB	10.0	9.14	91	35 - 115	

Surrogate	% Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	105	40 - 135

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: King County Environmental Laboratory

Job Number: 580-13230-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 580-42134

Method: 8151A
Preparation: 8151A

MS Lab Sample ID:	580-13230-2	Analysis Batch: 580-42245	Instrument ID: TAC008
Client Matrix:	Water	Prep Batch: 580-42134	Lab File ID: L31002.d
Dilution:	1.0		Initial Weight/Volume: 105 mL
Date Analyzed:	04/07/2009 0037		Final Weight/Volume: 1 mL
Date Prepared:	04/02/2009 1305		Injection Volume: 1 uL

MSD Lab Sample ID:	580-13230-2	Analysis Batch: 580-42245	Instrument ID: TAC008
Client Matrix:	Water	Prep Batch: 580-42134	Lab File ID: L31003.d
Dilution:	1.0		Initial Weight/Volume: 107 mL
Date Analyzed:	04/07/2009 0103		Final Weight/Volume: 1 mL
Date Prepared:	04/02/2009 1305		Injection Volume: 1 uL

Analyte	% Rec. MS	% Rec. MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Dalapon	30	21	16 - 103	39	39		
Dicamba	76	86	51 - 125	11	19		
Mecoprop	67	166	57 - 139	83	22		F
MCPA	87	85	60 - 145	4	30		
Dichlorprop	99	102	70 - 120	1	30		
2,4-D	92	97	42 - 128	4	15		
Silvex (2,4,5-TP)	88	90	63 - 119	0	17		
2,4,5-T	81	92	35 - 110	11	30		
Dinoseb	79	134	17 - 153	49	33		F
2,4-DB	87	84	35 - 115	5	30		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
2,4-Dichlorophenylacetic acid	86	61	40 - 135

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client: King County Environmental Laboratory

Job Number: 580-13230-1

Matrix Spike/
Matrix Spike Duplicate Data Report - Batch: 580-42134

Method: 8151A
Preparation: 8151A

MS Lab Sample ID: 580-13230-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 04/07/2009 0037
Date Prepared: 04/02/2009 1305

Units: ug/L

MSD Lab Sample ID: 580-13230-2
Client Matrix: Water
Dilution: 1.0
Date Analyzed: 04/07/2009 0103
Date Prepared: 04/02/2009 1305

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual	
Dalapon	ND	9.52	9.35	2.90	1.95	
Dicamba	ND	9.52	9.35	7.27	8.07	
Mecoprop	ND	9.52	9.35	6.43	15.5	F
MCPA	ND	9.52	9.35	8.29	7.98	
Dichlorprop	ND	9.52	9.35	9.45	9.50	
2,4-D	ND	9.52	9.35	8.72	9.04	
Silvex (2,4,5-TP)	ND	9.52	9.35	8.41	8.42	
2,4,5-T	ND	9.52	9.35	7.76	8.64	
Dinoseb	ND	9.52	9.35	7.55	12.5	F
2,4-DB	ND	9.52	9.35	8.25	7.88	

Calculations are performed before rounding to avoid round-off errors in calculated results.

DATA REPORTING QUALIFIERS

Client: King County Environmental Laboratory

Job Number: 580-13230-1

Lab Section	Qualifier	Description
GC/MS Semi VOA		
	F	MS or MSD exceeds the control limits
	F	RPD of the MS and MSD exceeds the control limits

Client: King County Environmental Laboratory

Job Number: 580-13230-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS Semi VOA					
Prep Batch: 580-42134					
LCS 580-42134/2-A	Lab Control Spike	T	Water	8151A	
MB 580-42134/1-A	Method Blank	T	Water	8151A	
580-13230-1	P47563-1	T	Water	8151A	
580-13230-2	P47563-2	T	Water	8151A	
580-13230-2MS	Matrix Spike	T	Water	8151A	
580-13230-2MSD	Matrix Spike Duplicate	T	Water	8151A	
580-13230-3	P47563-3	T	Water	8151A	
580-13230-4	P47563-4	T	Water	8151A	
580-13230-5	P47563-5	T	Water	8151A	
580-13230-6	P47563-6	T	Water	8151A	
Analysis Batch:580-42245					
LCS 580-42134/2-A	Lab Control Spike	T	Water	8151A	580-42134
MB 580-42134/1-A	Method Blank	T	Water	8151A	580-42134
580-13230-1	P47563-1	T	Water	8151A	580-42134
580-13230-2	P47563-2	T	Water	8151A	580-42134
580-13230-2MS	Matrix Spike	T	Water	8151A	580-42134
580-13230-2MSD	Matrix Spike Duplicate	T	Water	8151A	580-42134
580-13230-3	P47563-3	T	Water	8151A	580-42134
580-13230-4	P47563-4	T	Water	8151A	580-42134
580-13230-5	P47563-5	T	Water	8151A	580-42134
580-13230-6	P47563-6	T	Water	8151A	580-42134

Report Basis
T = Total

King County Environmental Lab Batch Report

WG101302 Ortho Phosphorus Pesticides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	OROPPEST-SHORT	STORM WTR	3/28/2009 13:53	3/31/2009 8:00	4/7/2009 14:01		
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	OROPPEST-SHORT	STORM WTR	3/28/2009 14:20	3/31/2009 8:00	4/7/2009 14:42		
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	OROPPEST-SHORT	STORM WTR	3/28/2009 11:20	3/31/2009 8:00	4/7/2009 15:23		
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	OROPPEST-SHORT	STORM WTR	3/28/2009 12:15	3/31/2009 8:00	4/7/2009 16:05		
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	OROPPEST-SHORT	STORM WTR	3/28/2009 12:50	3/31/2009 8:00	4/7/2009 16:46		
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	OROPPEST-SHORT	STORM WTR	3/28/2009 11:29	3/31/2009 8:00	4/7/2009 17:27	WG101302-1, -2, -3, -4	FREP@L47563-3
WG101302-1	MB		OROPPEST-SHORT	BLANK WTR		3/31/2009 8:00	4/7/2009 8:34		MB090331
WG101302-2	SB		OROPPEST-SHORT	BLANK WTR		3/31/2009 8:00	4/7/2009 9:16		WG101302-1
WG101302-3	MS		OROPPEST-SHORT	STORM WTR		3/31/2009 8:00	4/7/2009 12:38		L47563-5
WG101302-4	MSD		OROPPEST-SHORT	STORM WTR		3/31/2009 8:00	4/7/2009 13:19		WG101302-3 L47563-5

King County Environmental Lab Analytical QC Report

Workgroup: WG101302 Orthophosphorus Pesticides

MB:WG101302-1 Matrix: BLANK WTR Listtype: OROPPEST-SHORT Method: SW846 3520C*SW846 8270D Project: 421195CY
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Chlorpyrifos	0.034	0.05	ug/L	<MDL	
Diazinon	0.043	0.05	ug/L	<MDL	
Disulfoton	0.027	0.05	ug/L	<MDL	
Malathion	0.048	0.05	ug/L	<MDL	
Parathion-Ethyl	0.045	0.05	ug/L	<MDL	
Parathion-Methyl	0.036	0.05	ug/L	<MDL	
Phorate	0.033	0.05	ug/L	<MDL	

SB:WG101302-2 MB:WG101302-1 Matrix: BLANK WTR Listtype: OROPPEST-SHORT Method: SW846 3520C*SW846 8270D Project: 421195CY
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Chlorpyrifos	0.034	0.05	ug/L	<MDL	0.25	0.181	73		55--147
Diazinon	0.043	0.05	ug/L	<MDL	0.25	0.198	79		63--129
Disulfoton	0.027	0.05	ug/L	<MDL	0.25	0.147	59		40--132
Malathion	0.048	0.05	ug/L	<MDL	0.25	0.184	74		62--152
Parathion-Ethyl	0.045	0.05	ug/L	<MDL	0.25	0.245	98		46--203
Parathion-Methyl	0.036	0.05	ug/L	<MDL	0.25	0.243	97		31--215
Phorate	0.033	0.05	ug/L	<MDL	0.25	0.132	53		49--126

MSD:WG101302-4 MS:WG101302-3 L47563-5 Matrix: STORM WTR Listtype: OROPPEST-SHORT Method: SW846 3520C*SW846 8270D Project: 421195CY
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
Chlorpyrifos	0.032	0.0472	ug/L	<MDL	0.236	0.199	84		55--147	0.236	0.21	89		6		15
Diazinon	0.041	0.0472	ug/L	<MDL	0.236	0.256	109		63--129	0.236	0.283	120		10		12
Disulfoton	0.025	0.0472	ug/L	<MDL	0.236	0.161	68		40--132	0.236	0.164	70		3		18
Malathion	0.045	0.0472	ug/L	<MDL	0.236	0.222	94		62--152	0.236	0.238	101		7		14
Parathion-Ethyl	0.042	0.0472	ug/L	<MDL	0.236	0.314	133		46--203	0.236	0.35	148		11		21
Parathion-Methyl	0.034	0.0472	ug/L	<MDL	0.236	0.336	143		31--215	0.236	0.363	154		7		25
Phorate	0.031	0.0472	ug/L	<MDL	0.236	0.164	70		49--126	0.236	0.161	68		3		15

King County Environmental Lab Analytical QC Report

Surrogate:	rifos-D10
(Lab Limits)	0–164
L47563-1	93
L47563-2	95
L47563-3	88
L47563-4	96
L47563-5	94
L47563-6	91
WG101302-1	85
WG101302-2	92
WG101302-3	87
WG101302-4	86

King County Environmental Lab Batch Report

WG101379 Hexane Extractable Material - Silica Gel Treated

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47227-1	421301A	Georgetown Yard Industiral SW Monitoring	ORSGT-HEM	STORM WTR	4/1/2009 8:42	4/1/2009 7:00	4/3/2009 7:00		
L47227-2	421301A	Georgetown Yard Industiral SW Monitoring	ORSGT-HEM	STORM WTR	4/1/2009 8:35	4/1/2009 7:00	4/3/2009 7:00		
L47563-1	421195CY	WLRD-MercerIS. WQ Monitoring	ORSGT-HEM	STORM WTR	3/28/2009 13:53	4/1/2009 7:00	4/3/2009 7:00		
L47563-2	421195CY	WLRD-MercerIS. WQ Monitoring	ORSGT-HEM	STORM WTR	3/28/2009 14:20	4/1/2009 7:00	4/3/2009 7:00		
L47563-3	421195CY	WLRD-MercerIS. WQ Monitoring	ORSGT-HEM	STORM WTR	3/28/2009 11:20	4/1/2009 7:00	4/3/2009 7:00		
L47563-4	421195CY	WLRD-MercerIS. WQ Monitoring	ORSGT-HEM	STORM WTR	3/28/2009 12:15	4/1/2009 7:00	4/3/2009 7:00	WG101379-1, -2, -3, -4	
L47563-5	421195CY	WLRD-MercerIS. WQ Monitoring	ORSGT-HEM	STORM WTR	3/28/2009 12:50	4/1/2009 7:00	4/3/2009 7:00		
L47563-6	421195CY	WLRD-MercerIS. WQ Monitoring	ORSGT-HEM	STORM WTR	3/28/2009 11:29	4/1/2009 7:00	4/3/2009 7:00		FREP@L47563-3
WG101379-1	MB		ORSGT-HEM	BLANK WTR		4/1/2009 7:00	4/3/2009 7:00		MB090401
WG101379-2	SB		ORSGT-HEM	BLANK WTR		4/1/2009 7:00	4/3/2009 7:00		WG101379-1
WG101379-3	MS		ORSGT-HEM	STORM WTR		4/1/2009 7:00	4/3/2009 7:00		L47563-1
WG101379-4	LD		ORSGT-HEM	STORM WTR		4/1/2009 7:00	4/3/2009 7:00		L47563-2

King County Environmental Lab Analytical QC Report

Workgroup: WG101379 Hexane Extractable Material - Silica Gel Treated

MB:WG101379-1 Matrix: BLANK WTR Listtype: ORSGT-HEM Method: EPA 1664A Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
SGT-Hem (oil, nonpolar)	2	5	mg/L	<MDL	

SB:WG101379-2 MB:WG101379-1 Matrix: BLANK WTR Listtype: ORSGT-HEM Method: EPA 1664A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
SGT-Hem (oil, nonpolar)	2	5	mg/L	<MDL	20	16	80		64--132

MS:WG101379-3 L47563-1 Matrix: STORM WTR Listtype: ORSGT-HEM Method: EPA 1664A Project: 421195CY
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
SGT-Hem (oil, nonpolar)	2.2	5.43	mg/L	<MDL	21.7	15.5	72		64--132

LD:WG101379-4 L47563-2 Matrix: STORM WTR Listtype: ORSGT-HEM Method: EPA 1664A Project: 421195CY
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
SGT-Hem (oil, nonpolar)	2.2	5.62	mg/L	<MDL	<MDL			34

^ For the following parameters, the values in RPD column are Absolute Difference:

pH
pH, Field
Salinity
Salinity, Field
sample Depth
sample Temperature, Field

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

July 13, 2009

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195CY
Mercer Island Stormwater Monitoring, Baseflow Event
Samples L48416-1 to 5, collected June 22, 2009

Attached is the comprehensive report for the water samples collected and delivered to the laboratory on June 22, 2009. The samples were analyzed in the Trace Organics, Microbiology and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:
There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:
There were no anomalies associated with the preparation and the analysis of these samples.

Organics:

There were no anomalies associated with the preparation and the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

1202M

King County Environmental Lab Analytical Report

PROJECT: 421195-180

Locator:	MERCERISL06	MERCERISL10	MERCERISL26	MERCERISL32
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	FOREST AVE. AND 84	CREEK NEAR HOLLYHI
Client Loc:				
Sampled:	06/22/09 11:50:00 AM	06/22/09 12:20:00 PM	06/22/09 10:00:00 AM	06/22/09 10:28:00 AM
TimeSpan:				
Lab ID:	L48416-1	L48416-2	L48416-3	L48416-4
Matrix:	FRESH WTR	FRESH WTR	FRESH WTR	FRESH WTR
% Solids:				

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
			-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis					-Wet Weight Basis		
COMBINED LABS																				
M=CV SM2540-D																				
Total Suspended Solids	2.4		0.5	1	mg/L	1.01		0.5	1	mg/L	13.4		1.1	2.1	mg/L	4.2		0.5	1	mg/L
M=ES NONE																				
Conductivity, Field	225		0.5	10	umhos/cm	374		0.5	10	umhos/cm	260		0.5	10	umhos/cm	186		0.5	10	umhos/cm
Discharge Rate of Stream	0.3		0.05	0.1	cfs	0.2		0.05	0.1	cfs	0.1	RDL	0.05	0.1	cfs	No data-too	TA	0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	89.1				%	70.5				%	92				%	78.1				%
Dissolved Oxygen, Field	9.4		0.5	1	mg/L	7.2		0.5	1	mg/L	9.8		0.5	1	mg/L	8.2		0.5	1	mg/L
Field Personnel	JP				none	JP				none	JP				none	JP				none
pH, Field	7.72				pH	7.7				pH	7.77				pH	7.31				pH
Sample Temperature, Field	12.9				deg C	14.7				deg C	12.7				deg C	12.9				deg C
Turbidity, Field	2		0.5	2	NTU	2	RDL	0.5	2	NTU	7.4		0.5	2	NTU	2.3		0.5	2	NTU
M=MC SM 9222D 20TH																				
Fecal Coliform	260				CFU/100ml	400				CFU/100ml	200				CFU/100ml	210				CFU/100ml
M=OR SW-846 8151A GCMS MODIFIED																				
2,4,5-T		<MDL	0.51	1.02	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.52	1.04	ug/L
2,4,5-TP (Silvex)		<MDL	0.51	1.02	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.52	1.04	ug/L
2,4-D		<MDL	0.51	1.02	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.52	1.04	ug/L
2,4-DB		<MDL	0.51	1.02	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.52	1.04	ug/L
Dichloroprop		<MDL	0.51	1.02	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.52	1.04	ug/L
Dinoseb		<MDL	0.51	1.02	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.52	1.04	ug/L
MCPA		<MDL	0.51	1.02	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.52	1.04	ug/L
MCPP		<MDL	0.51	1.02	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.52	1.04	ug/L

King County Environmental Lab Analytical Report

PROJECT: 421195-180

Locator:	MERCERISL42
Descrip:	E. MERCER WAY
Client Loc:	
Sampled:	06/22/09 10:58:00 AM
TimeSpan:	
Lab ID:	L48416-5
Matrix:	FRESH WTR
% Solids:	

Parameters	Value	Qual	MDL	RDL	Units
		-Wet Weight Basis			
COMBINED LABS					
M=CV SM2540-D					
Total Suspended Solids	3.04		0.5	1.1	mg/L
M=ES NONE					
Conductivity, Field	256		0.5	10	umhos/cm
Discharge Rate of Stream	0.1	RDL	0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	84.5				%
Dissolved Oxygen, Field	9.1		0.5	1	mg/L
Field Personnel	JP				none
pH, Field	7.62				pH
Sample Temperature, Field	12.2				deg C
Turbidity, Field	2.3		0.5	2	NTU
M=MC SM 9222D 20TH					
Fecal Coliform	330				CFU/100ml
M=OR SW-846 8151A GCMS MODIFIED					
2,4,5-T		<MDL	0.53	1.05	ug/L
2,4,5-TP (Silvex)		<MDL	0.53	1.05	ug/L
2,4-D		<MDL	0.53	1.05	ug/L
2,4-DB		<MDL	0.53	1.05	ug/L
Dichloroprop		<MDL	0.53	1.05	ug/L
Dinoseb		<MDL	0.53	1.05	ug/L
MCPA		<MDL	0.53	1.05	ug/L
MCPP		<MDL	0.53	1.05	ug/L

PROJECT: 421195-180

King County Environmental Lab Matrix Report

COMBINED LABS-Liquid

Locator	Sample Depth	Lab ID	Total Suspended Solids mg/L	Conductivity, Field umhos/cm	Discharge Rate of Stream cfs	Dissolved Oxygen Saturation, Field %	Dissolved Oxygen, Field mg/L	Sample Temperature, Field deg C	Turbidity, Field NTU	pH, Field pH	Fecal Coliform CFU/100ml
MERCERISL06		L48416-1	2.4	225	0.3	89.1	9.4	12.9	2	7.72	260
MERCERISL10		L48416-2	1.01	374	0.2	70.5	7.2	14.7	2	7.7	400
MERCERISL26		L48416-3	13.4	260	0.1	92	9.8	12.7	7.4	7.77	200
MERCERISL32		L48416-4	4.2	186	No data-too shallow to measure	78.1	8.2	12.9	2.3	7.31	210
MERCERISL42		L48416-5	3.04	256	0.1	84.5	9.1	12.2	2.3	7.62	330

MERCER ISLAND BASEFLOW SAMPLING

Project Number: 421195-180 Personnel: J. Power

Sample No. (Type)	P48416-1	P48416-2	P48416-3
Locator	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	
Locator Desc.	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time	22-JUN-09/1150	/1220	/1000
End Date/Time			
Time Span			
Sample Depth			
Comments	baseline micro	baseline micro	baseline micro
COND, FIELD	225.1	374.3	259.5
DO SAT, FIELD	89.1	70.5	92.0
DO, FIELD	9.42	7.17	9.77
PERSONNEL	JP	JP	JP
PH, FIELD	7.72	7.70	7.77
SAMP TEMP	12.93	14.73	12.67
STRM FLOW	0.3 CFS	0.2 CFS	0.1 CFS
TURB, FIELD	2.02	2.00	7.43
Dept., Matrix, Prod	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB

THISTLE + FALSE BAMBOO FOREST

continue ...

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
JEAN POWER	6/22/09	1318
RECEIVED BY	Date	Time
[illegible]	6-22-09	1318

Sample Number(s) L48416 1-5 (All)

MERCER ISLAND BASEFLOW SAMPLING

Project Number: 421195-180 Personnel: JP

Sample No. (Type)	P48416-4	P48416-5	
Locator	MERCERISL32	MERCERISL42	
Short Loc. Desc.			
Locator Desc.			
Site	KING COUNTY	KING COUNTY	
Start Date/Time	22-JUN-09 1028	1058	
End Date/Time			
Time Span			
Sample Depth			
Comments	baseline micro	baseline micro	
COND, FIELD	186.2	255.7	
DO SAT, FIELD	78.1	84.5	
DO, FIELD	8.22	9.08	
PERSONNEL	JP	JP	
PH, FIELD	7.31	7.62	
SAMP TEMP	12.87	12.15	
STRM FLOW	NO DATA - TOO LOW FOR FLOW METER	0.1 CFS	
TURB, FIELD	2.29	2.32	
Dept., Matrix, Prod	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	

End of Fieldsheet.

WG103096 Total Suspended Solids

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L48132-1	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	6/23/2009 0:00	6/24/2009 16:30	6/26/2009 9:57		
L48132-2	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	6/23/2009 0:00	6/24/2009 16:30	6/26/2009 9:58		
L48132-3	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	6/23/2009 0:00	6/24/2009 16:30	6/26/2009 9:59		
L48132-4	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	6/23/2009 0:00	6/24/2009 16:30	6/26/2009 10:00		
L48132-5	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	6/23/2009 0:00	6/24/2009 16:30	6/26/2009 10:01		
L48132-6	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	6/23/2009 0:00	6/24/2009 16:30	6/26/2009 10:01		
L48132-7	421874-100	City of Shoreline Monthly Water Quality Monitoring	CVTSS	FRESH WTR	6/23/2009 0:00	6/24/2009 16:30	6/26/2009 10:02		
L48416-1	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	6/22/2009 11:50	6/24/2009 16:30	6/26/2009 10:03	WG103096-1, -2, -3, -4	
L48416-2	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	6/22/2009 12:20	6/24/2009 16:30	6/26/2009 10:03		
L48416-3	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	6/22/2009 10:00	6/24/2009 16:30	6/26/2009 10:04		
L48416-4	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	6/22/2009 10:28	6/24/2009 16:30	6/26/2009 10:06		
L48416-5	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	6/22/2009 10:58	6/24/2009 16:30	6/26/2009 10:06		
WG103096-1	MB		CVTSS	BLANK WTR		6/24/2009 16:30	6/26/2009 9:56		MB4 090624
WG103096-2	LCS		CVTSS	BLANK WTR		6/24/2009 16:30	6/26/2009 9:56		LEVEL1
WG103096-3	LD		CVTSS	FRESH WTR		6/24/2009 16:30	6/26/2009 9:58		L48132-2
WG103096-4	LD		CVTSS	FRESH WTR		6/24/2009 16:30	6/26/2009 10:05		L48416-3

WG103218 Field Meter QC

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L48416-1	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	FRESH WTR	6/22/2009 11:50				
L48416-1	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	6/22/2009 11:50				
L48416-2	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	6/22/2009 12:20				
L48416-2	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	FRESH WTR	6/22/2009 12:20				
L48416-3	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	FRESH WTR	6/22/2009 10:00				
L48416-3	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	6/22/2009 10:00				
L48416-4	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	6/22/2009 10:28			WG103218-1, -2, -3	
L48416-4	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	FRESH WTR	6/22/2009 10:28				
L48416-5	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	FRESH WTR	6/22/2009 10:58				
L48416-5	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	6/22/2009 10:58				
WG103218-1	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG103218-2	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG103218-3	CS		ESS-FIELDMETER	BLANK WTR					RANGE1

WG103042 Fecal coliform

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L48416-1	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	6/22/2009 11:50	6/22/2009 14:10	6/23/2009 12:20		
L48416-2	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	6/22/2009 12:20	6/22/2009 14:10	6/23/2009 12:20		
L48416-3	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	6/22/2009 10:00	6/22/2009 14:10	6/23/2009 12:20		
L48416-4	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	6/22/2009 10:28	6/22/2009 14:10	6/23/2009 12:20		
L48416-5	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	6/22/2009 10:58	6/22/2009 14:10	6/23/2009 12:20		
WG103042-1	LD		MCFC-MF	FRESH WTR		6/22/2009 14:10	6/23/2009 12:20	WG103042-1, WG103015-1, -2, -3, -4	L48416-1
WG103015-1	PC		MCFC-MF	BLANK WTR		6/22/2009 15:40	6/23/2009 14:30		QC-PERFORMED:22-JUN-09
WG103015-2	NC		MCFC-MF	BLANK WTR		6/22/2009 15:40	6/23/2009 14:30		QC-PERFORMED:22-JUN-09
WG103015-3	BF		MCFC-MF	BLANK WTR		6/22/2009 15:40	6/23/2009 14:30		QC-PERFORMED:22-JUN-09
WG103015-4	AF		MCFC-MF	BLANK WTR		6/22/2009 15:40	6/23/2009 14:30		QC-PERFORMED:22-JUN-09

WG103137 Herbicides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L48275-1	421422-CHLS-M	SWD-CHLS-M Cedar Hills Leachate Monthly	ORHERB-SWD	LEACHATE	6/24/2009 9:45	6/25/2009 14:00	7/1/2009 14:15		
L48275-3	421422-CHLS-M	SWD-CHLS-M Cedar Hills Leachate Monthly	ORHERB-SWD	LEACHATE	6/24/2009 10:40	6/25/2009 14:00	7/1/2009 14:51		
L48416-1	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	6/22/2009 11:50	6/25/2009 14:00	7/1/2009 11:16		
L48416-2	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	6/22/2009 12:20	6/25/2009 14:00	7/1/2009 11:52		
L48416-3	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	6/22/2009 10:00	6/25/2009 14:00	7/1/2009 12:27		
L48416-4	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	6/22/2009 10:28	6/25/2009 14:00	7/1/2009 13:03	WG103137-1, -2, -3, -4	
L48416-5	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	6/22/2009 10:58	6/25/2009 14:00	7/1/2009 13:39		
WG103137-1	MB		ORHERB	BLANK WTR		6/25/2009 14:00	7/1/2009 8:52		MB090625
WG103137-2	SB		ORHERB	BLANK WTR		6/25/2009 14:00	7/1/2009 9:27		WG103137-1
WG103137-3	MS		ORHERB	FRESH WTR		6/25/2009 14:00	7/1/2009 10:04		L48416-5
WG103137-4	MSD		ORHERB	FRESH WTR		6/25/2009 14:00	7/1/2009 10:40		WG103137-3 L48416-5

King County Environmental Lab Analytical QC Report

Workgroup: WG103096 Total Suspended Solids

MB:WG103096-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG103096-2 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	88	88		80--120

LD:WG103096-3 L48132-2 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421874-100
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	1.6	2			25

LD:WG103096-4 L48416-3 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1.1	2.1	mg/L	13.4	12.1	10		25

King County Environmental Lab Analytical QC Report

Workgroup: WG103218 Field Meter QC

CS:WG103218-1 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	74.6	101		90--110
pH, Field			pH	6.86	6.81	0.05		0--.2

CS:WG103218-2 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	74.9	101		90--110
pH, Field			pH	6.86	6.88	0.02		0--.2

CS:WG103218-3 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	76	103		90--110
Dissolved Oxygen Saturation, Field			%	100	99.3	99		96--104
pH, Field			pH	6.86	6.88	0.02		0--.2

King County Environmental Lab Analytical QC Report

Workgroup: WG103042 Fecal coliform

LD:WG103042-1 L48416-1 Matrix: FRESH WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	Rlog	P value	Qual
Fecal Coliform			CFU/100ml	260	220	0.07	0.24	N1

PC:WG103015-1 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG103015-2 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG103015-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG103015-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

King County Environmental Lab Analytical QC Report

Workgroup: WG103137 Herbicides

MB:WG103137-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 421422-CHLS-M
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
2,4,5-T	0.5	1	ug/L	<MDL	
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	
2,4-D	0.5	1	ug/L	<MDL	
2,4-DB	0.5	1	ug/L	<MDL	
Dichloroprop	0.5	1	ug/L	<MDL	
Dinoseb	0.5	1	ug/L	<MDL	
MCPA	0.5	1	ug/L	<MDL	
MCPP	0.5	1	ug/L	<MDL	

SB:WG103137-2 MB:WG103137-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 421422-CHLS-M
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
2,4,5-T	0.5	1	ug/L	<MDL	5	1.8	36		10--200
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	5	2.89	58		10--200
2,4-D	0.5	1	ug/L	<MDL	5	2.83	57		10--200
2,4-DB	0.5	1	ug/L	<MDL	5	5.06	101		10--200
Dichloroprop	0.5	1	ug/L	<MDL	5	3.7	74		10--200
Dinoseb	0.5	1	ug/L	<MDL	5	4.97	99		10--200
MCPA	0.5	1	ug/L	<MDL	5	6.75	135		10--200
MCPP	0.5	1	ug/L	<MDL	5	6.31	126		10--200

MSD:WG103137-4 MS:WG103137-3 L48416-5 Matrix: FRESH WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 421422-CHLS-M
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2,4,5-T	0.5	1	ug/L	<MDL	5	2.09	42		10--200	5	2.07	41		2		40
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	5	2.74	55		10--200	5	2.77	55		0		40
2,4-D	0.5	1	ug/L	<MDL	5	2.92	58		10--200	5	3.11	62		7		40
2,4-DB	0.5	1	ug/L	<MDL	5	5.05	101		10--200	5	4.85	97		4		40
Dichloroprop	0.5	1	ug/L	<MDL	5	3.57	71		10--200	5	3.86	77		8		40
Dinoseb	0.5	1	ug/L	<MDL	5	5.47	109		10--200	5	5.77	115		5		40
MCPA	0.5	1	ug/L	<MDL	5	6.15	123		10--200	5	6.78	136		10		40
MCPP	0.5	1	ug/L	<MDL	5	6.2	124		10--200	5	6.95	139		11		40

King County Environmental Lab Analytical QC Report

Surrogate: (Lab Limits)	2,4-Dichloro phenyl acetic acid 10--200
L48275-1	97
L48275-3	75
L48416-1	47
L48416-2	66
L48416-3	41
L48416-4	66
L48416-5	45
WG103137-1	40
WG103137-2	42
WG103137-3	48
WG103137-4	60

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

August 20, 2009

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180
Mercer Island Stormwater Monitoring, Baseflow Event
Samples L48522-1 to 5, collected July 20, 2009

Attached is the comprehensive report for the water samples collected and delivered to the laboratory on July 20, 2009. The samples were analyzed in the Trace Organics, Microbiology and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:

There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:

There were no anomalies associated with the preparation and the analysis of these samples.

Organics:

There were no anomalies associated with the preparation and the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

1202M

King County Environmental Lab Analytical Report

Project:	421195-180	421195-180	421195-180
Locator:	MERCERISL06	MERCERISL10	MERCERISL26
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	FOREST AVE. AND 84
Sample:	L48522-1	L48522-2	L48522-3
Matrix:	LK FRESH WTR	LK FRESH WTR	LK FRESH WTR
ColDate:	7/20/09 12:10	7/20/09 12:35	7/20/09 10:30
TimeSpan:			
TotalSolid:			
ClientLoc:			
SampDepth:			
	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
CV SM2540-D															
Total Suspended Solids	1.5		0.5	1	mg/L	1.6		0.5	1	mg/L	5.2		0.5	1	mg/L
ES NONE															
Conductivity, Field	325		0.5	10	umhos/cm	310		0.5	10	umhos/cm	296		0.5	10	umhos/cm
Discharge Rate of Stream	0.1	RDL	0.05	0.1	cfs	0.2		0.05	0.1	cfs	0.1	RDL	0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	85.5				%	77.5				%	91.8				%
Dissolved Oxygen, Field	8.5		0.5	1	mg/L	7.5		0.5	1	mg/L	9.1		0.5	1	mg/L
Field Personnel	JP				none	JP				none	JP				none
Sample Temperature, Field	15.7				deg C	16.9				deg C	15.9				deg C
Turbidity, Field	0.97	<RDL	0.5	2	NTU	1.8	<RDL	0.5	2	NTU	2.1		0.5	2	NTU
pH, Field	7.79				pH	7.72				pH	7.86				pH
MC SM 9222D 20TH															
Fecal Coliform	720				CFU/100ml	100				CFU/100ml	91				CFU/100ml
OR SW-846 8151A GCMS MODIFIED															
2,4,5-T		<MDL	0.51	1.01	ug/L		<MDL	0.51	1.01	ug/L		<MDL	0.49	0.98	ug/L
2,4,5-TP (Silvex)		<MDL	0.51	1.01	ug/L		<MDL	0.51	1.01	ug/L		<MDL	0.49	0.98	ug/L
2,4-D		<MDL	0.51	1.01	ug/L		<MDL	0.51	1.01	ug/L		<MDL	0.49	0.98	ug/L
2,4-DB		<MDL	0.51	1.01	ug/L		<MDL	0.51	1.01	ug/L		<MDL	0.49	0.98	ug/L
Dichloroprop		<MDL	0.51	1.01	ug/L		<MDL	0.51	1.01	ug/L		<MDL	0.49	0.98	ug/L
Dinoseb		<MDL	0.51	1.01	ug/L		<MDL	0.51	1.01	ug/L		<MDL	0.49	0.98	ug/L
MCPA		<MDL	0.51	1.01	ug/L		<MDL	0.51	1.01	ug/L		<MDL	0.49	0.98	ug/L
MCPP		<MDL	0.51	1.01	ug/L		<MDL	0.51	1.01	ug/L		<MDL	0.49	0.98	ug/L

King County Environmental Lab Analytical Report

Project:	421195-180					Project:	421195-180				
Locator:	MERCERISL32					Locator:	MERCERISL42				
Descrip:	CREEK NEAR HOLLYHI					Descrip:	E. MERCER WAY				
Sample:	L48522-4					Sample:	L48522-5				
Matrix:	LK FRESH WTR					Matrix:	LK FRESH WTR				
ColDate:	7/20/09 11:00					ColDate:	7/20/09 11:26				
TimeSpan:						TimeSpan:					
TotalSolid:						TotalSolid:					
ClientLoc:						ClientLoc:					
SampDepth:						SampDepth:					
WET Weight Basis						**WET Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
CV SM2540-D										
Total Suspended Solids	3		1	2	mg/L	5.16		0.5	1.1	mg/L
ES NONE										
Conductivity, Field	257		0.5	10	umhos/cm	290		0.5	10	umhos/cm
Discharge Rate of Stream		TA	0.05	0.1	cfs	0.2		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	69.4				%	87.4				%
Dissolved Oxygen, Field	6.9		0.5	1	mg/L	8.9		0.5	1	mg/L
Field Personnel	JP				none	JP				none
Sample Temperature, Field	15.8				deg C	15				deg C
Turbidity, Field	0.94	<RDL	0.5	2	NTU	2.1		0.5	2	NTU
pH, Field	7.35				pH	7.68				pH
MC SM 9222D 20TH										
Fecal Coliform	76				CFU/100ml	530				CFU/100ml
OR SW-846 8151A GCMS MODIFIED										
2,4,5-T		<MDL	0.48	0.962	ug/L		<MDL	0.51	1.01	ug/L
2,4,5-TP (Silvex)		<MDL	0.48	0.962	ug/L		<MDL	0.51	1.01	ug/L
2,4-D		<MDL	0.48	0.962	ug/L		<MDL	0.51	1.01	ug/L
2,4-DB		<MDL	0.48	0.962	ug/L		<MDL	0.51	1.01	ug/L
Dichloroprop		<MDL	0.48	0.962	ug/L		<MDL	0.51	1.01	ug/L
Dinoseb		<MDL	0.48	0.962	ug/L		<MDL	0.51	1.01	ug/L
MCPA		<MDL	0.48	0.962	ug/L		<MDL	0.51	1.01	ug/L
MCPP		<MDL	0.48	0.962	ug/L		<MDL	0.51	1.01	ug/L

PROJECT: 421195-180

King County Environmental Lab Matrix Report

COMBINED LABS-Liquid

Locator	Sample Depth	Lab ID	Total Suspended Solids mg/L	Fecal Coliform CFU/100ml	Conductivity, Field umhos/cm	Discharge Rate of Stream cfs	Dissolved Oxygen Saturation, Field %	Dissolved Oxygen, Field mg/L	Sample Temperature, Field deg C	Turbidity, Field NTU	pH, Field pH
MERCERISL06		L48522-1	1.5	720	325	0.1	85.5	8.5	15.7	0.97	7.79
MERCERISL10		L48522-2	1.6	100	310	0.2	77.5	7.5	16.9	1.8	7.72
MERCERISL26		L48522-3	5.2	91	296	0.1	91.8	9.1	15.9	2.1	7.86
MERCERISL32		L48522-4	3	76	257	<.1 CFS- visual est.	69.4	6.9	15.8	0.94	7.35
MERCERISL42		L48522-5	5.16	530	290	0.2	87.4	8.9	15	2.1	7.68

Login Number: P48522

MERCER ISLAND BASEFLOW SAMPLING - JULY 2009

Project Number: 421195-180

Personnel: J. POWER

Sample No. (Type)	P48522-1	P48522-2	P48522-3
Locator	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	
Locator Desc.	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time	20-JUL-09/1210	/1235	/1030
End Date/Time			
Time Span			
Sample Depth			
Comments	baseline micro	baseline micro	baseline micro
COND, FIELD	325.0	310.4	296.3
DO SAT, FIELD	85.5	77.5	91.8
DO, FIELD	8.50	7.52	9.11
PERSONNEL	JP	JP	JP
PH, FIELD	7.79	7.72	7.86
SAMP TEMP	15.68	16.90	15.86
STRM FLOW	~~0.9 CFS~~ 0.1	~~0.8 CFS~~ 0.2	0.1 CFS
TURB, FIELD	0.97	1.79	2.14
Dept., Matrix, Prod	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB

continue ...

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
JEAN POWER	7/22/09	~~12~~ 1371
RECEIVED BY	**Date**	**Time**
[illegible]	7-20-09	1321

Sample Number(s)

L48522 1-5 (All)

MERCER ISLAND BASEFLOW SAMPLING - JULY 2009

Project Number: 421195-180 Personnel: _____

Sample No. (Type)	P48522-4	P48522-5	
Locator	MERCERISL32	MERCERISL42	
Short Loc. Desc.			
Locator Desc.			
Site	KING COUNTY	KING COUNTY	
Start Date/Time	20-JUL-09/1100	/1126	
End Date/Time	SUPER LOW		
Time Span			
Sample Depth			
Comments	baseline micro	baseline micro	
COND, FIELD	257.3	290.0	
DO SAT, FIELD	69.4	87.4	
DO, FIELD	6.92	8.85	
PERSONNEL	JP	JP	
PH, FIELD	7.35	7.68	
SAMP TEMP	15.83	14.98	
STRM FLOW	<0.1 TOO LOW TO USE SNOFFALT	0.2 CFS	
TURB, FIELD	0.94	2.13	
Dept., Matrix, Prod	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	

End of Fieldsheet.

King County Environmental Lab Batch Report

WG103685 Total Suspended Solids

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L48522-1	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	7/20/2009 12:10	7/24/2009 12:00	7/27/2009 16:54	WG103685-1, -2, -3	
L48522-2	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	7/20/2009 12:35	7/24/2009 12:00	7/27/2009 16:54		
L48522-3	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	7/20/2009 10:30	7/24/2009 12:00	7/27/2009 16:55		
L48522-4	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	7/20/2009 11:00	7/24/2009 12:00	7/27/2009 16:55		
L48522-5	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	7/20/2009 11:26	7/24/2009 12:00	7/27/2009 16:57		
WG103685-1	MB		CVTSS	BLANK WTR		7/24/2009 12:00	7/27/2009 16:52		MB1 090724
WG103685-2	LCS		CVTSS	BLANK WTR		7/24/2009 12:00	7/27/2009 16:53		LEVEL1
WG103685-3	LD		CVTSS	FRESH WTR		7/24/2009 12:00	7/27/2009 16:56		L48522-4

King County Environmental Lab Analytical QC Report

Workgroup: WG103685 Total Suspended Solids

MB:WG103685-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG103685-2 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	90	90		80--120

LD:WG103685-3 L48522-4 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	3	2.8	7		25

King County Environmental Lab Batch Report

WG103600 Field Parameters

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L48522-1	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	FRESH WTR	7/20/2009 12:10				
L48522-1	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	7/20/2009 12:10				
L48522-2	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	7/20/2009 12:35				
L48522-2	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	FRESH WTR	7/20/2009 12:35				
L48522-3	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	7/20/2009 10:30				
L48522-3	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	FRESH WTR	7/20/2009 10:30				
L48522-4	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	7/20/2009 11:00			WG103600-1, -2, -3, -4	
L48522-4	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	FRESH WTR	7/20/2009 11:00				
L48522-5	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	FRESH WTR	7/20/2009 11:26				
L48522-5	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	7/20/2009 11:26				
WG103600-1	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG103600-2	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG103600-3	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG103600-4	CS		ESS-FIELDMETER	BLANK WTR					RANGE2

King County Environmental Lab Analytical QC Report

Workgroup: WG103600 Field Parameters

CS:WG103600-1 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73	99		90--110
pH, Field			pH	6.86	6.81	0.05		0--.2

CS:WG103600-2 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73	99		90--110
pH, Field			pH	6.86	6.88	0.02		0--.2

CS:WG103600-3 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73	99		90--110
Dissolved Oxygen Saturation, Field			%	100	98.6	99		96--104
pH, Field			pH	6.86	6.86	0		0--.2

CS:WG103600-4 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Turbidity, Field	0.5	2	NTU	5.99	6	100		80--120

King County Environmental Lab Batch Report

WG103539 Fecal Coliform

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L48522-1	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	7/20/2009 12:10	7/20/2009 14:15	7/21/2009 13:05		
L48522-2	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	7/20/2009 12:35	7/20/2009 14:15	7/21/2009 13:05		
L48522-3	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	7/20/2009 10:30	7/20/2009 14:15	7/21/2009 13:05		
L48522-4	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	7/20/2009 11:00	7/20/2009 14:15	7/21/2009 13:05		
L48522-5	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	7/20/2009 11:26	7/20/2009 14:15	7/21/2009 13:05	WG103539-1, -2, -3, -4, -5	
WG103539-1	LD		MCFC-MF	FRESH WTR		7/20/2009 14:15	7/21/2009 13:05		L48522-2
WG103539-2	PC		MCFC-MF	BLANK WTR		7/20/2009 14:15	7/21/2009 13:05		QC-PERFORMED:
WG103539-3	NC		MCFC-MF	BLANK WTR		7/20/2009 14:15	7/21/2009 13:05		QC-PERFORMED:
WG103539-4	BF		MCFC-MF	BLANK WTR		7/20/2009 14:15	7/21/2009 13:05		QC-PERFORMED:
WG103539-5	AF		MCFC-MF	BLANK WTR		7/20/2009 14:15	7/21/2009 13:05		QC-PERFORMED:

King County Environmental Lab Analytical QC Report

Workgroup: WG103539 Fecal Coliform

LD:WG103539-1 L48522-2 Matrix: FRESH WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	Rlog	P value	Qual
Fecal Coliform			CFU/100ml	100	140	0.15	0.36	N2

PC:WG103539-2 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG103539-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG103539-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG103539-5 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

King County Environmental Lab Batch Report

WG103629 Chlorinated Herbicides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L48522-1	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	7/20/2009 12:10	7/21/2009 8:00	7/29/2009 11:27		
L48522-2	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	7/20/2009 12:35	7/21/2009 8:00	7/29/2009 12:04		
L48522-3	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	7/20/2009 10:30	7/21/2009 8:00	7/29/2009 12:40		
L48522-4	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	7/20/2009 11:00	7/21/2009 8:00	7/29/2009 13:17		
L48522-5	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	7/20/2009 11:26	7/21/2009 8:00	7/29/2009 13:53		
L48552-1	423258-100-1	Reclaimed Water Nutrient Characterization	ORHERB	FRESH WTR	7/15/2009 12:10	7/21/2009 8:00	7/29/2009 14:30	WG103629-1, -2, -3, -4, -5	
L48552-2	423258-100-1	Reclaimed Water Nutrient Characterization	ORHERB	FRESH WTR	7/15/2009 10:20	7/21/2009 8:00	7/29/2009 15:07		
WG103629-1	MB		ORHERB	BLANK WTR		7/21/2009 8:00	7/29/2009 8:27		MB090721
WG103629-2	SB		ORHERB	BLANK WTR		7/21/2009 8:00	7/29/2009 9:03		WG103629-1
WG103629-3	SBD		ORHERB	BLANK WTR		7/21/2009 8:00	7/29/2009 9:39		WG103629-2 WG103629-1
WG103629-4	MS		ORHERB	FRESH WTR		7/21/2009 8:00	7/29/2009 10:15		L48552-2
WG103629-5	MSD		ORHERB	FRESH WTR		7/21/2009 8:00	7/29/2009 10:51		WG103629-4 L48552-2

King County Environmental Lab Analytical QC Report

Workgroup: WG103629 Chlorinated Herbicides

MB:WG103629-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 423258-100-1
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
2,4,5-T	0.5	1	ug/L	<MDL	
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	
2,4-D	0.5	1	ug/L	<MDL	
2,4-DB	0.5	1	ug/L	<MDL	
Dichloroprop	0.5	1	ug/L	<MDL	
Dinoseb	0.5	1	ug/L	<MDL	
MCPA	0.5	1	ug/L	<MDL	
MCPP	0.5	1	ug/L	<MDL	

SBD:WG103629-3 SB:WG103629-2 MB:WG103629-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 423258-100-1
(Spiked Blank Duplicate, Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit	True Value	BD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2,4,5-T	0.5	1	ug/L	<MDL	5	1.02	20		10--200	5	1.21	24		18		40
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	5	2.22	44		10--200	5	2.38	48		9		40
2,4-D	0.5	1	ug/L	<MDL	5	1.53	31		10--200	5	2.09	42		30		40
2,4-DB	0.5	1	ug/L	<MDL	5	4.49	90		10--200	5	4.42	88		2		40
Dichloroprop	0.5	1	ug/L	<MDL	5	2.56	51		10--200	5	2.83	57		11		40
Dinoseb	0.5	1	ug/L	<MDL	5	4.63	93		10--200	5	4.67	93		0		40
MCPA	0.5	1	ug/L	<MDL	5	1.87	37		10--200	5	2.41	48		26		40
MCPP	0.5	1	ug/L	<MDL	5	1.81	36		10--200	5	2.19	44		20		40

MSD:WG103629-5 MS:WG103629-4 L48552-2 Matrix: FRESH WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 423258-100-1
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2,4,5-T	0.49	0.971	ug/L	<MDL	4.71	1.31	28		10--200	4.71	1.05	22		24		40
2,4,5-TP (Silvex)	0.49	0.971	ug/L	<MDL	4.71	2.46	52		10--200	4.71	3.04	65		22		40
2,4-D	0.49	0.971	ug/L	<MDL	4.71	1.62	34		10--200	4.71	1.13	24		34		40
2,4-DB	0.49	0.971	ug/L	<MDL	4.71	3.95	84		10--200	4.71	5.09	108		25		40
Dichloroprop	0.49	0.971	ug/L	<MDL	4.71	3.2	68		10--200	4.71	3.45	73		7		40
Dinoseb	0.49	0.971	ug/L	<MDL	4.71	5.87	125		10--200	4.71	6.15	130		4		40
MCPA	0.49	0.971	ug/L	<MDL	4.71	2.41	51		10--200	4.71	1.71	36		34		40
MCPP	0.49	0.971	ug/L	<MDL	4.71	2.82	60		10--200	4.71	3	64		6		40

King County Environmental Lab Analytical QC Report

Surrogate:	:etic acid
(Lab Limits)	10--200
L48522-1	42
L48522-2	59
L48522-3	28
L48522-4	46
L48522-5	34
L48552-1	46
L48552-2	43
WG103629-1	29
WG103629-2	32
WG103629-3	32
WG103629-4	49
WG103629-5	55

^ For the following parameters, the values in RPD column are Absolute Difference:
pH, Field

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

September 29, 2009

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180
Mercer Island Stormwater Monitoring, Baseflow Event
Samples L48878-1 to 3, 5, collected August 24, 2009

Attached is the comprehensive report for the water samples collected and delivered to the laboratory on August 24, 2009. The samples were analyzed in the Trace Organics, Microbiology and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:

There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:

There were no anomalies associated with the preparation and the analysis of these samples.

Organics:

There were no anomalies associated with the preparation and the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

King County Environmental Lab Analytical Report

Project:	421195-180	421195-180	421195-180
Locator:	MERCERISL06	MERCERISL10	MERCERISL26
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	FOREST AVE. AND 84
Sample:	L48878-1	L48878-2	L48878-3
Matrix:	LK FRESH WTR	LK FRESH WTR	LK FRESH WTR
ColDate:	8/24/09 11:20	8/24/09 11:55	8/24/09 9:50
TimeSpan:			
TotalSolid:			
ClientLoc:			
SampDepth:			
	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
CV SM2540-D															
Total Suspended Solids		<MDL	0.5	1	mg/L		<MDL	1	1.9	mg/L	6.91		0.5	1.1	mg/L
ES NONE															
Conductivity, Field	323		0.5	10	umhos/cm	299		0.5	10	umhos/cm	306		0.5	10	umhos/cm
Discharge Rate of Stream	0.2		0.05	0.1	cfs	0.08	<RDL	0.05	0.1	cfs		<MDL	0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	87.8				%	73.6				%	89.2				%
Dissolved Oxygen, Field	9.1		0.5	1	mg/L	7.2		0.5	1	mg/L	9.1		0.5	1	mg/L
Field Personnel	JP				none	JP				none	JP				none
Sample Temperature, Field	13.8				deg C	16.6				deg C	14.6				deg C
Turbidity, Field	0.51	<RDL	0.5	2	NTU	0.95	<RDL	0.5	2	NTU	2.3		0.5	2	NTU
pH, Field	7.92				pH	7.76				pH	7.99				pH
MC SM 9222D 20TH															
Fecal Coliform	310				CFU/100ml	88				CFU/100ml	14				CFU/100ml
OR SW-846 8151A GCMS MODIFIED															
2,4,5-T		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L
2,4,5-TP (Silvex)		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L
2,4-D		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L
2,4-DB		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L
Dichloroprop		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L
Dinoseb		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L
MCPA		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L
MCPP		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L

King County Environmental Lab Analytical Report

Project:	421195-180
Locator:	MERCERISL42
Descrip:	E. MERCER WAY
Sample:	L48878-5
Matrix:	LK FRESH WTR
ColDate:	8/24/09 10:35
TimeSpan:	
TotalSolid:	
ClientLoc:	
SampDepth:	

WET Weight Basis

Parameters	Value	Qual	MDL	RDL	Units
CV SM2540-D					
Total Suspended Solids	2.6		0.5	1	mg/L
ES NONE					
Conductivity, Field	292		0.5	10	umhos/cm
Discharge Rate of Stream	0.24		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	80.7				%
Dissolved Oxygen, Field	8.4		0.5	1	mg/L
Field Personnel	JP				none
Sample Temperature, Field	13.7				deg C
Turbidity, Field	1.9	<RDL	0.5	2	NTU
pH, Field	7.78				pH
MC SM 9222D 20TH					
Fecal Coliform	260				CFU/100ml
OR SW-846 8151A GCMS MODIFIED					
2,4,5-T		<MDL	0.49	0.971	ug/L
2,4,5-TP (Silvex)		<MDL	0.49	0.971	ug/L
2,4-D		<MDL	0.49	0.971	ug/L
2,4-DB		<MDL	0.49	0.971	ug/L
Dichloroprop		<MDL	0.49	0.971	ug/L
Dinoseb		<MDL	0.49	0.971	ug/L
MCPA		<MDL	0.49	0.971	ug/L
MCPP		<MDL	0.49	0.971	ug/L

Login Number: P48878

MERCER ISLAND BASEFLOW SAMPLING

Project Number: 421195-180

Personnel: J. Power

Sample No. (Type)	P48878-1	P48878-2	P48878-3
Locator	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	
Locator Desc.	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time	24-AUG-09/1120	/1155	/0950
End Date/Time			
Time Span			
Sample Depth			
Comments	baseline micro	baseline micro	baseline micro
COND, FIELD	322.6	298.5	306.0
DO SAT, FIELD	87.8	73.6	89.2
DO, FIELD	~~9.16~~ 9.11	7.22	9.07
PERSONNEL	JP	JP	JP
PH, FIELD	7.92	7.76	7.99
SAMP TEMP	13.78	16.57	14.63
STRM FLOW	0.20CFS	~~0.1CFS~~ 0.08CFS	~~0.1CFS~~ 0.04CFS
TURB, FIELD	0.51	0.95	2.28
Dept., Matrix, Prod	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB
	LOW FLOW	CRAYFISH IN POOL ABOVE CULVERT PRETTY LOW FLOW	SUPER LOW FLOW

continue ...

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
Jean Power	8/24/09	1305
RECEIVED BY	**Date**	**Time**
[illegible]	8-24-09	1305
Sample Number(s)		
L48878 ~~1-4~~ 1-3+5 (All)		

(DELETE -4)

WG104581
R 137529

MERCER ISLAND BASEFLOW SAMPLING

Project Number: 421195-180 Personnel: _____

Sample No. (Type)	P48878-4	P48878-5	
Locator	MERCERISL32	MERCERISL42	
Short Loc. Desc.			
Locator Desc.			
Site	KING COUNTY	KING COUNTY	@ MERCERISL42
Start Date/Time	24-AUG-09/	24-AUG-09/1035	HYDROLAB FREP /1045
End Date/Time			
Time Span			
Sample Depth			
Comments	baseline micro	baseline micro	
COND, FIELD		292.3	291.6
DO SAT, FIELD		80.7	81.0
DO, FIELD		8.38	8.40
PERSONNEL	JP	JP	JP
PH, FIELD		7.78	7.77
SAMP TEMP		13.67	13.63
STRM FLOW		0.24 CFS	
TURB, FIELD		1.85	2.00
Dept., Matrix, Prod	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	

LOW FLOW

End of Fieldsheet.

SEDIMENTS NOT COLLECTED

DELETE - DRY
NO FLOW

King County Environmental Laboratory Batch Report

Mercer Island SW Montoring, Storm, L48878

WG104339 TSS

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L48721-1	421196-190	Roads ESA Support	CVTSS	FRESH WTR	8/19/2009 8:15	8/24/2009 17:00	8/25/2009 15:10	WG104339-1,-2,-3,-4	
L48721-2	421196-190		CVTSS	FRESH WTR	8/19/2009 12:30	8/24/2009 17:00	8/25/2009 15:11		
L48721-3	421196-190		CVTSS	FRESH WTR	8/19/2009 12:50	8/24/2009 17:00	8/25/2009 15:12		
L48721-4	421196-190		CVTSS	FRESH WTR	8/19/2009 9:00	8/24/2009 17:00	8/25/2009 15:12		
L48721-5	421196-190		CVTSS	FRESH WTR	8/19/2009 9:30	8/24/2009 17:00	8/25/2009 15:13		
L48721-6	421196-190		CVTSS	FRESH WTR	8/19/2009 10:15	8/24/2009 17:00	8/25/2009 15:13		
L48721-7	421196-190		CVTSS	FRESH WTR	8/19/2009 10:45	8/24/2009 17:00	8/25/2009 15:14		
L48721-8	421196-190		CVTSS	FRESH WTR	8/19/2009 11:30	8/24/2009 17:00	8/25/2009 15:15		
L48721-9	421196-190		CVTSS	FRESH WTR	8/19/2009 11:50	8/24/2009 17:00	8/25/2009 15:16		
L48721-10	421196-190		CVTSS	FRESH WTR	8/19/2009 13:30	8/24/2009 17:00	8/25/2009 15:16		
L48878-1	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	8/24/2009 11:20	8/24/2009 17:00	8/25/2009 15:17		
L48878-2	421195-180		CVTSS	FRESH WTR	8/24/2009 11:55	8/24/2009 17:00	8/25/2009 15:18		
L48878-3	421195-180		CVTSS	FRESH WTR	8/24/2009 9:50	8/24/2009 17:00	8/25/2009 15:19		
L48878-5	421195-180		CVTSS	FRESH WTR	8/24/2009 10:35	8/24/2009 17:00	8/25/2009 15:20		
WG104339-1	MB		CVTSS	BLANK WTR		8/24/2009 17:00	8/25/2009 15:09		MB1 090824
WG104339-2	LCS		CVTSS	BLANK WTR		8/24/2009 17:00	8/25/2009 15:10		LEVEL1
WG104339-3	LD		CVTSS	FRESH WTR		8/24/2009 17:00	8/25/2009 15:15		L48721-8
WG104339-4	LD		CVTSS	FRESH WTR		8/24/2009 17:00	8/25/2009 15:18		L48878-2

King County Environmental Laboratory Batch Report

Mercer Island SW Montoring, Storm, L48878

WG104581 Field Paramters

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L48878-1	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	8/24/2009 11:20			WG104581-1,-2,-3	
L48878-1	421195-180		ESS-FIELDMETER	FRESH WTR	8/24/2009 11:20				
L48878-2	421195-180		ESS	FRESH WTR	8/24/2009 11:55				
L48878-2	421195-180		ESS-FIELDMETER	FRESH WTR	8/24/2009 11:55				
L48878-3	421195-180		ESS	FRESH WTR	8/24/2009 9:50				
L48878-3	421195-180		ESS-FIELDMETER	FRESH WTR	8/24/2009 9:50				
L48878-5	421195-180		ESS	FRESH WTR	8/24/2009 10:35				
L48878-5	421195-180		ESS-FIELDMETER	FRESH WTR	8/24/2009 10:35				
WG104581-1	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG104581-2	FREP		ESS-FIELDMETER	FRESH WTR					L48878-5 RANGE1
WG104581-3	CS		ESS-FIELDMETER	BLANK WTR					RANGE1

King County Environmental Laboratory Batch Report

Mercer Island SW Montoring, Storm, L48878

WG104316 Fecal coliform

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L48878-1	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	8/24/2009 11:20	8/24/2009 13:40	8/25/2009 13:40	WG104316-1,-2,-3,-4	
L48878-2	421195-180		MCFC-MF	FRESH WTR	8/24/2009 11:55	8/24/2009 13:40	8/25/2009 13:40		
L48878-3	421195-180		MCFC-MF	FRESH WTR	8/24/2009 9:50	8/24/2009 13:40	8/25/2009 13:40		
L48878-5	421195-180		MCFC-MF	FRESH WTR	8/24/2009 10:35	8/24/2009 13:40	8/25/2009 13:40		
WG104316-1	PC		MCFC-MF	BLANK WTR		8/24/2009 13:40	8/25/2009 13:40		QC-PERFORMED: 24-AUG-09
WG104316-2	NC		MCFC-MF	BLANK WTR		8/24/2009 13:40	8/25/2009 13:40		QC-PERFORMED: 24-AUG-09
WG104316-3	BF		MCFC-MF	BLANK WTR		8/24/2009 13:40	8/25/2009 13:40		QC-PERFORMED: 24-AUG-09
WG104316-4	AF		MCFC-MF	BLANK WTR		8/24/2009 13:40	8/25/2009 13:40		QC-PERFORMED: 24-AUG-09

King County Environmental Laboratory Batch Report

Mercer Island SW Montoring, Storm, L48878

WG104457 Herbicides

Sample	Project	Project Description	List Type	Matrix	Collect Date	Prep Date	Anal Date	QC Association	Comments
L48878-1	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	8/24/2009 11:20	8/27/2009 13:00	9/1/2009 19:00		
L48878-2	421195-180		ORHERB	FRESH WTR	8/24/2009 11:55	8/27/2009 13:00	9/1/2009 19:35		
L48878-3	421195-180		ORHERB	FRESH WTR	8/24/2009 9:50	8/27/2009 13:00	9/1/2009 20:11		
L48878-5	421195-180		ORHERB	FRESH WTR	8/24/2009 10:35	8/27/2009 13:00	9/1/2009 20:47		
WG104457-1	MB		ORHERB	BLANK WTR		8/27/2009 13:00	9/1/2009 16:37	WG104457-1,-2,-3,-4	MB090827
WG104457-2	SB		ORHERB	BLANK WTR		8/27/2009 13:00	9/1/2009 17:12		WG104457-1
WG104457-3	MS		ORHERB	FRESH WTR		8/27/2009 13:00	9/1/2009 17:48		L48878-3
WG104457-4	MSD		ORHERB	FRESH WTR		8/27/2009 13:00	9/1/2009 18:24		WG104457-3 L48878-3

King County Environmental Lab Analytical QC Report

Mercer Island Baseflow, L48878

Workgroup: WG104339 Total Suspended Solids

MB:WG104339-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG104339-2 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	94	94		80--120

LD:WG104339-3 L48721-8 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421196-190
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	1.9	mg/L	1.7	1.5			25

LD:WG104339-4 L48878-2 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	1.9	mg/L	<MDL	<MDL			25

Workgroup: WG104581 Field Parameters

CS:WG104581-1 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	73.2	99		90--110
pH, Field			pH	6.86	6.81	0.05		0--.2

FREP:WG104581-2 L48878-5 Matrix: FRESH WTR Listtype: ESS-FIELDMETER Method: NONE Project: 421195-180
(Field Replicate)

Parameter	MDL	RDL	Units	Samp Value	EP Value	RPD^	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	292	292	0		10
Dissolved Oxygen, Field	0.5	1	mg/L	8.4	8.4	0		20
Sample Temperature, Field			deg C	13.7	13.6	0.04		0.3
pH, Field			pH	7.78	7.77	0.01		0.2

CS:WG104581-3 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	72.1	97		90--110
Dissolved Oxygen Saturation, Field			%	100	98.2	98		96--104
pH, Field			pH	6.86	6.9	0.04		0--.2

Workgroup: WG104316 Fecal Coliform

PC:WG104316-1 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG104316-2 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG104316-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG104316-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

Workgroup: WG104457 Herbicides

MB:WG104457-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 421195-180
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
2,4,5-T	0.5	1	ug/L	<MDL	
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	
2,4-D	0.5	1	ug/L	<MDL	
2,4-DB	0.5	1	ug/L	<MDL	
Dichloroprop	0.5	1	ug/L	<MDL	
Dinoseb	0.5	1	ug/L	<MDL	
MCPA	0.5	1	ug/L	<MDL	
MCPP	0.5	1	ug/L	<MDL	

SB:WG104457-2 MB:WG104457-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 421195-180
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
2,4,5-T	0.5	1	ug/L	<MDL	5	2.01	40		10--200
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	5	3.85	77		10--200
2,4-D	0.5	1	ug/L	<MDL	5	2	40		10--200
2,4-DB	0.5	1	ug/L	<MDL	5	1.14	23		10--200
Dichloroprop	0.5	1	ug/L	<MDL	5	1.01	20		10--200
Dinoseb	0.5	1	ug/L	<MDL	5	5.54	111		10--200
MCPA	0.5	1	ug/L	<MDL	5	3.21	64		10--200
MCPP	0.5	1	ug/L	<MDL	5	3.22	64		10--200

MSD:WG104457-4 MS:WG104457-3 L48878-3 Matrix: FRESH WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 421195-180
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2,4,5-T	0.49	0.971	ug/L	<MDL	4.9	3.78	77		10--200	4.85	3.83	79		3		40
2,4,5-TP (Silvex)	0.49	0.971	ug/L	<MDL	4.9	4.21	86		10--200	4.85	4.15	85		1		40
2,4-D	0.49	0.971	ug/L	<MDL	4.9	5.25	107		10--200	4.85	5.23	108		1		40
2,4-DB	0.49	0.971	ug/L	<MDL	4.9	1.11	23		10--200	4.85	1.01	21		9		40
Dichloroprop	0.49	0.971	ug/L	<MDL	4.9	1.12	23		10--200	4.85	1.12	23		0		40
Dinoseb	0.49	0.971	ug/L	<MDL	4.9	5.86	120		10--200	4.85	5.72	118		2		40
MCPA	0.49	0.971	ug/L	<MDL	4.9	4.4	90		10--200	4.85	4.34	89		1		40
MCPP	0.49	0.971	ug/L	<MDL	4.9	3.54	72		10--200	4.85	3.28	68		6		40

Surrogate:	cetic acid
(Lab Limits)	**10--200**
L48878-1	102
L48878-2	116
L48878-3	103
L48878-5	84
WG104457-1	67
WG104457-2	79
WG104457-3	85
WG104457-4	82

^ For the following parameters, the values in RPD column are Absolute Difference:
pH, Field

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

October 21, 2009

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180
Mercer Island Stormwater Monitoring, Baseflow Event
Samples L48964-1 to 5, collected September 21, 2009

Attached is the comprehensive report for the water samples collected and delivered to the laboratory on September 21, 2009. The samples were analyzed in the Trace Organics, Microbiology and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:

There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:

There were no anomalies associated with the preparation and the analysis of these samples.

Organics:

There were no anomalies associated with the preparation and the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

King County Environmental Lab Analytical Report

Project:	421195-180					Project:	421195-180					Project:	421195-180								
Locator:	MERCERISL06					Locator:	MERCERISL10					Locator:	MERCERISL26								
Descrip:	R/D FACILITY SOUTH					Descrip:	SE 22ND ST, NEAR M					Descrip:	FOREST AVE. AND 84								
Sample:	L48964-1					Sample:	L48964-2					Sample:	L48964-3								
Matrix:	LK FRESH WTR					Matrix:	LK FRESH WTR					Matrix:	LK FRESH WTR								
ColDate:	9/21/09 11:55					ColDate:	9/21/09 12:20					ColDate:	9/21/09 9:55								
TimeSpan:						TimeSpan:						TimeSpan:									
TotalSolid:						TotalSolid:						TotalSolid:									
ClientLoc:						ClientLoc:						ClientLoc:									
SampDepth:						SampDepth:						SampDepth:									
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**					
CV SM2540-D																					
Total Suspended Solids		<MDL	1	2	mg/L	0.8	<RDL	0.5	1	mg/L		1.5		0.5	1	mg/L					
ES NONE																					
Conductivity, Field	313		0.5	10	umhos/cm	299		0.5	10	umhos/cm		305		0.5	10	umhos/cm					
Discharge Rate of Stream	0.12		0.05	0.1	cfs	0.2		0.05	0.1	cfs			TA	0.05	0.1	cfs					
Dissolved Oxygen Saturation, Field	91.1				%	78.5				%		96.7				%					
Dissolved Oxygen, Field	9.7		0.5	1	mg/L	7.8		0.5	1	mg/L		10.3		0.5	1	mg/L					
Field Personnel	JP				none	JP				none		JP				none					
Sample Temperature, Field	13				deg C	15.9				deg C		13.3				deg C					
Turbidity, Field	0.95	<RDL	0.5	2	NTU	1	<RDL	0.5	2	NTU		1.2	<RDL	0.5	2	NTU					
pH, Field	7.73				pH	7.65				pH		7.72				pH					
MC SM 9222D 20TH																					
Fecal Coliform	240				CFU/100ml	73				CFU/100ml		110				CFU/100ml					
OR SW-846 8151A GCMS MODIFIED																					
2,4,5-T		<MDL	0.5	1	ug/L		<MDL	0.51	1.01	ug/L			<MDL	0.5	1	ug/L					
2,4,5-TP (Silvex)		<MDL	0.5	1	ug/L		<MDL	0.51	1.01	ug/L			<MDL	0.5	1	ug/L					
2,4-D		<MDL	0.5	1	ug/L		<MDL	0.51	1.01	ug/L			<MDL	0.5	1	ug/L					
2,4-DB		<MDL	0.5	1	ug/L		<MDL	0.51	1.01	ug/L			<MDL	0.5	1	ug/L					
Dichloroprop		<MDL	0.5	1	ug/L		<MDL	0.51	1.01	ug/L			<MDL	0.5	1	ug/L					
Dinoseb		<MDL	0.5	1	ug/L		<MDL	0.51	1.01	ug/L			<MDL	0.5	1	ug/L					
MCPA		<MDL	0.5	1	ug/L		<MDL	0.51	1.01	ug/L			<MDL	0.5	1	ug/L					
MCPP		<MDL	0.5	1	ug/L		<MDL	0.51	1.01	ug/L			<MDL	0.5	1	ug/L					

King County Environmental Lab Analytical Report

	Project:	421195-180					Project:	421195-180			
	Locator:	MERCERISL32					Locator:	MERCERISL42			
	Descrip:	CREEK NEAR HOLLYHI					Descrip:	E. MERCER WAY			
	Sample:	L48964-4					Sample:	L48964-5			
	Matrix:	LK FRESH WTR					Matrix:	LK FRESH WTR			
	ColDate:	9/21/09 10:20					ColDate:	9/21/09 11:05			
	TimeSpan:						TimeSpan:				
	TotalSolid:						TotalSolid:				
	ClientLoc:						ClientLoc:				
	SampDepth:						SampDepth:				
	WET Weight Basis						**WET Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
CV SM2540-D										
Total Suspended Solids	7.1		0.5	1	mg/L	1.6		0.5	1	mg/L
ES NONE										
Conductivity, Field	137		0.5	10	umhos/cm	283		0.5	10	umhos/cm
Discharge Rate of Stream	0.1	RDL	0.05	0.1	cfs	0.17		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	77.6				%	85.7				%
Dissolved Oxygen, Field	8.1		0.5	1	mg/L	9.1		0.5	1	mg/L
Field Personnel	JP				none	JP				none
Sample Temperature, Field	13.6				deg C	12.9				deg C
Turbidity, Field	2.7		0.5	2	NTU	1.2	<RDL	0.5	2	NTU
pH, Field	7.31				pH	7.55				pH
MC SM 9222D 20TH										
Fecal Coliform	290				CFU/100ml	430				CFU/100ml
OR SW-846 8151A GCMS MODIFIED										
2,4,5-T		<MDL	0.5	0.99	ug/L		<MDL	0.52	1.03	ug/L
2,4,5-TP (Silvex)		<MDL	0.5	0.99	ug/L		<MDL	0.52	1.03	ug/L
2,4-D		<MDL	0.5	0.99	ug/L		<MDL	0.52	1.03	ug/L
2,4-DB		<MDL	0.5	0.99	ug/L		<MDL	0.52	1.03	ug/L
Dichloroprop		<MDL	0.5	0.99	ug/L		<MDL	0.52	1.03	ug/L
Dinoseb		<MDL	0.5	0.99	ug/L		<MDL	0.52	1.03	ug/L
MCPA		<MDL	0.5	0.99	ug/L		<MDL	0.52	1.03	ug/L
MCPP		<MDL	0.5	0.99	ug/L		<MDL	0.52	1.03	ug/L

DESCRIPTION OF COMPREHENSIVE REPORT CONTENTS

Locator

Each sampling site is assigned a unique locator code which defines a unique geographic reference for that sampling point. Locators are also used to identify non-geographic samples in LIMS.

Sample Date

The sample date is labeled Sampled. It is the record in LIMs, of the month, day, and year the sample was collected.

Lab ID

Each sample receives a unique Lab sample number, so that all samples can be referenced by their sample numbers.

Matrix.

Matrix is the Lab's designation of the physical nature of the sample and source. There are four groups of matrices: liquids, solids, tissues, and air. The matrices and their codes are as follows.

LIQUID		
	OTHER WTR	LA
	INFLUENT	LB
	EFFLUENT	LC
	DIG SLUDGE	LD
	IW WATER	LE
	SEWER WTR	LF
	STORM WTR	LG
	DRINK WTR	LH
	GRND WTR	LJ
	FRESH WTR	LK
	SALT WTR	LL
	FILTER WTR	LM
	BLANK WTR	LN
	SEPTAGE	LP
	TCLP LEACH	LQ
	RECON WTR	LR
	SEM EXTRACT	LS
	NON-WATER	LT
	CONSTRUCTION DEWATERING WATER	LU
SOLIDS		
	OTHR SOLID	SA
	SOIL	SB
	COMPOST	SC
	SLUDGE	SD
	FRSHWTRSED	SE
	SALTWTRSED	SF
	IW SLUDGE	SG
	IN-LINE SED	SH
	SOLIDBLANK	SJ
TISSUES		
	OTHR TISS	TA
	ALGAE	TB
	PLANT	TC
	SHELLFISH	TD
	FISH	TE
	CRAYFISH W	TF
	CRAYFISH E	TG
	ORGANS	TH
	FISH PLASMA	TP
AIR		
	AIR BLANK	AA
	AMBIENT AIR	AB
	LANDFILL GAS	AC
	SEWER GAS	AD

%Solids

The percent of the non-liquid (by weight) portion of the solid sample. All data are calculated and stored on a wet weight basis. The % Solid value is used, if requested, to normalize and report data on a dry weight basis. Each sample will be flagged either **Wet Weight Basis** or **Dry Weight Basis** in the report. Note that the conversion to a dry weight basis is not applicable to all parameters, such as pH and Particle Size Distribution. Parameters not converted to dry weight basis may be included in the same column with dry weight results but will be noted with an *.

Parameters

Parameters (analytes tested for) are reported in sub-groups corresponding to the laboratory that tested for them. The sub-groups are: **organics, metals, conventionals, microbiology, field analysis, and toxicology.**

Value and Units

The value is the measurement of the parameter expressed in the appropriate units of measure. The units of measure are stated directly beneath the label ***Units***.

Qual (qualifiers)

See attached table on the reverse side.

MDL and RDL

The Method Detection Limit (MDL) is the minimum concentration of an analyte that can be measured and reported with 99% confidence that the true analyte concentration is greater than zero. The MDL value reported may be adjusted upward to eliminate false positives or meet qualitative requirements of the method.
The Reporting Detection Limit (RDL) is the minimum measured concentration of an analyte that can be reliably quantitated. The RDL is usually a multiple of the reported MDL.

Additional Information:

1. Significant Figures for reported values: As standard practice the Lab reports values above the RDL to 3 figures. Values below the RDL are reported to 2 figures. There are exceptions to the standard convention for microbiological, aquatic toxicology, field and some conventional data.
2. Precautions concerning data: It is possible to inadvertently commit errors in combining data points. **Matrix, Units and Analytical Method** should be consistent when combining or comparing data. Parameter name changes, analytical methods and detection limits have changed over time. Data storage practices have also changed. In the 1970's and 80's measured values that were below the detection limit were not always reported with a <MDL qualifier. The value reported may be the detection limit rather than a quantifiable response. If, in older data (i.e. 1970's) the lowest value in the series is repeated several times, the Lab should be contacted for clarification.

If you have questions, call the Info Systems and Data Analysis Unit: Kerry Tappel (684-2366).

DESCRIPTION OF COMPREHENSIVE REPORT CONTENTS

General Purpose Qualifiers		Chemistry and Biology Qualifers		Sediment (QA1) Qualifiers	
Qualifier	Definition	Qualifier	Definition	Qualifier	Definition
B, B2, B3	Blank contamination observed	P	Target parameter detected above the MDL (HCID only)	JG	Estimated value with a low bias
E	Reported value is above the calibration range of the method	J#	Tentatively identified compound (GCMS only). The value entered for # indicates the confidence level of the identification.	JL	Estimated value with a high bias
J	Estimated value	C	Value is an estimate, based on presence of confluent growth (microbiology only)	JK	Estimated value with an unknown bias
H	Holding time has been exceeded	E	Result is based on an estimation technique (microbiology only)		
< MDL	less than the method detection limit	> ####	Result exceeds measurable range of the procedure* (biology only) where ### = measurable range		
R	Rejected, unusable for all purposes	NF	Target organism not recovered or identified (microbiology only)		
RDL	equal to the reporting detection limit	P	Target organism identified (biology methods)		
< RDL	less than the reporting detection limit	D	Indicates the species was predominant in the population (biology only)		
SH	Sample handling criterion not met	S	Indicates the species was second to predominant in the sample (biology only)		
TA	text information available	AD	Adult form of organism identified in sample (biology only)		
		LV	Larval form of organism identified (biology only)		
		PU	Pupa form of organism identified (biology only)		
		PASS	Qualitative QC response was acceptable		
		FAIL	Qualitative QC response was unacceptable		

* > ### is used for biological tests where the result of the analysis is above the measureable range of the method. The value entered for ### is the upper range of the method. No value is entered in the value field.

Login Number: P48964

MERCER ISLAND BASEFLOW SAMPLING

Project Number: 421195-180

Personnel: J. Power

Sample.No. (Type)	P48964-1	P48964-2	P48964-3
Locator	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	
Locator Desc.	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time 21-SEP-09	21-SEP-09/1155	/1220	/0955
End Date/Time			
Time Span			
Sample Depth			
Comments	baseline micro	baseline micro	baseline micro
COND, FIELD	313.1	298.5	304.5
DO SAT, FIELD	91.1	78.5	96.7
DO, FIELD	9.68	7.81	10.28
PERSONNEL	JP	JP	JP
PH, FIELD	7.73	7.65	7.72
SAMP TEMP	12.96	15.90	13.30
STRM FLOW	0.12 SNOFFER	0.20 SNOFFER	<.1 SNOFFER
TURB, FIELD	0.95	1.01	1.19
Dept., Matrix, Prod	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB

VERY LOW

continue ...

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
Jean Power	9/21/09	1335
RECEIVED BY	Date	Time
[illegible]	9-21-09	1335

Sample Number(s)

L 48964 1-5 (All)

MERCER ISLAND BASEFLOW SAMPLING

Project Number: 421195-180 Personnel: J. PUWER

Sample No. (Type)	P48964-4	P48964-5	
Locator	MERCERISL32	MERCERISL42	
Short Loc. Desc.			
Locator Desc.			
Site	KING COUNTY	KING COUNTY	
Start Date/Time	21-SEP-09/1020	/1105	(FREP) /1110
End Date/Time			
Time Span			
Sample Depth			
Comments	baseline micro	baseline micro	
COND, FIELD	136.7	283.0	281.0
DO SAT, FIELD	77.6	85.7	86.0
DO, FIELD	8.12	9.12	9.00
PERSONNEL	JP	JP	JP
PH, FIELD	7.31	7.55	7.56
SAMP TEMP	13.63	12.90	12.73
STRM FLOW	.10 CFS	0.17	—
TURB, FIELD	2.70	1.21	1.04
Dept., Matrix, Prod	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	3 FRESH WTR TSS 5 FRESH WTR FC-MF 7 FRESH WTR HERB	

End of Fieldsheet.

King County Environmental Lab Analytical QC Report

Mercer Island Baseflow, L48964

Workgroup: WG104968 Total Suspended Solids

MB:WG104968-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG104968-2 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	85	85		80--120

LD:WG104968-3 L48901-5 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421874-100
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	1.9	mg/L	<MDL	<MDL			25

LD:WG104968-4 L48964-1 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	<MDL	<MDL			25

LD:WG104968-5 L49077-7 Matrix: GRND WTR Listtype: CVTSS Method: SM2540-D Project: 421195-191
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1.4	2.9	mg/L	<MDL	<MDL			25

Workgroup: WG105018 Field Parameters

CS:WG105018-1 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	74.1	100		90--110
pH, Field			pH	6.86	6.82	0.04		0--.2

FREP:WG105018-2 L48964-5 Matrix: FRESH WTR Listtype: ESS-FIELDMETER Method: NONE Project: 421195-180
(Field Replicate)

Parameter	MDL	RDL	Units	Samp Value	EP Value	RPD^	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	283	281	1		10
Dissolved Oxygen, Field	0.5	1	mg/L	9.1	9	1		20
Sample Temperature, Field			deg C	12.9	12.7	0.17		0.3
pH, Field			pH	7.55	7.56	0.01		0.2

CS:WG105018-3 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	73.9	100		90--110
pH, Field			pH	6.86	6.8	0.06		0--.2

CS:WG105018-4 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	73.2	99		90--110
Dissolved Oxygen Saturation, Field			%	100	99.4	99		96--104
pH, Field			pH	6.86	6.92	0.06		0--.2

King County Environmental Lab Analytical QC Report

Mercer Island Baseflow, L48964

Workgroup: WG104765 Fecal Coliform

LD:WG104765-1 L48964-2 Matrix: FRESH WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	Rlog	P value	Qual
Fecal Coliform			CFU/100ml	73	160	0.34	0.61	N3

PC:WG104765-2 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG104765-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG104765-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG104765-5 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

King County Environmental Lab Analytical QC Report

Mercer Island Baseflow, L48964

Workgroup: WG104913 Chlorinated Herbicides

MB:WG104913-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 421879
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
2,4,5-T	0.5	1	ug/L	<MDL	
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	
2,4-D	0.5	1	ug/L	<MDL	
2,4-DB	0.5	1	ug/L	<MDL	
Dichloroprop	0.5	1	ug/L	<MDL	
Dinoseb	0.5	1	ug/L	<MDL	
MCPA	0.5	1	ug/L	<MDL	
MCPP	0.5	1	ug/L	<MDL	

SB:WG104913-2 MB:WG104913-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 421879
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
2,4,5-T	0.5	1	ug/L	<MDL	5	3	60		10--200
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	5	6.61	132		10--200
2,4-D	0.5	1	ug/L	<MDL	5	2.95	59		10--200
2,4-DB	0.5	1	ug/L	<MDL	5	8.04	161		10--200
Dichloroprop	0.5	1	ug/L	<MDL	5	4.72	94		10--200
Dinoseb	0.5	1	ug/L	<MDL	5	3.36	67		10--200
MCPA	0.5	1	ug/L	<MDL	5	3.5	70		10--200
MCPP	0.5	1	ug/L	<MDL	5	5.11	102		10--200

MSD:WG104913-4 MS:WG104913-3 L49093-2 Matrix: FRESH WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 421879
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2,4,5-T	0.5	0.99	ug/L	<MDL	4.95	6.13	124		10--200	4.95	5.37	108		14		40
2,4,5-TP (Silvex)	0.5	0.99	ug/L	<MDL	4.95	8.39	169		10--200	4.95	8.37	169		0		40
2,4-D	0.5	0.99	ug/L	<MDL	4.95	3.95	80		10--200	4.95	3.57	72		11		40
2,4-DB	0.5	0.99	ug/L	<MDL	4.95	7.29	147		10--200	4.95	7.32	148		1		40
Dichloroprop	0.5	0.99	ug/L	<MDL	4.95	5.76	116		10--200	4.95	5.46	110		5		40
Dinoseb	0.5	0.99	ug/L	<MDL	4.95	4.62	93		10--200	4.95	4.39	89		4		40
MCPA	0.5	0.99	ug/L	<MDL	4.95	4.3	87		10--200	4.95	4.1	83		5		40
MCPP	0.5	0.99	ug/L	<MDL	4.95	6.41	129		10--200	4.95	6.25	126		2		40

Surrogate: (Lab Limits)	2,4-Dichloro phenyl acetic acid 10--200
L48755-1	134
L48964-1	97
L48964-2	107
L48964-3	103
L48964-4	114
L48964-5	98
L49093-1	131
L49093-2	123
L49134-1	137
L49134-2	132
WG104913-1	99
WG104913-2	109
WG104913-3	138
WG104913-4	140

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

November 24, 2009

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180
Mercer Island Stormwater Monitoring,
Stormwater Samples, L49162-1 to 6

Attached is the comprehensive report for the stormwater samples collected and delivered to the laboratory on October 26, 2009. The samples were analyzed in the Trace Metals, Microbiology and Conventionals units of the laboratory. A comprehensive report #13894 was send via email on November 24, 2009. QA/QC data summaries are included for your information.

Conventionals:
There were no anomalies associated with the preparation and the analysis of these samples.

Metals:
There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:
There were no anomalies associated with the preparation and the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

1202M

King County Environmental Lab Analytical Report

Project:	421195-180	421195-180	421195-180
Locator:	MERCERISL06	MERCERISL10	MERCERISL26
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	FOREST AVE. AND 84
Sample:	L49162-1	L49162-2	L49162-3
Matrix:	LG STORM WTR	LG STORM WTR	LG STORM WTR
ColDate:	10/26/09 12:30	10/26/09 12:10	10/26/09 9:51
TimeSpan:			
TotalSolid:			
ClientLoc:			
SampDepth:			
	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
CV SM2540-D															
Total Suspended Solids	216		1.7	3.3	mg/L	11.2		0.5	1	mg/L	492		5	10	mg/L
ES NONE															
Conductivity, Field	120		0.5	10	umhos/cm	93.2		0.5	10	umhos/cm	60		0.5	10	umhos/cm
Discharge Rate of Stream	3.44		0.05	0.1	cfs	3.7		0.05	0.1	cfs	4.89		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	95.7				%	94.7				%	91.2				%
Dissolved Oxygen, Field	10.2		0.5	1	mg/L	10.4		0.5	1	mg/L	10.1		0.5	1	mg/L
Field Personnel	JD				none	JD				none	JD				none
Sample Temperature, Field	12.1				deg C	10.5				deg C	10.5				deg C
Turbidity, Field	19.2		0.5	2	NTU	135		0.5	2	NTU	388		0.5	2	NTU
pH, Field	7.29				pH	7.53				pH	7.23				pH
MC SM 9222D 20TH															
Fecal Coliform	940				CFU/100ml	1500				CFU/100ml	22000				CFU/100ml
MT EPA 200.8*SW846 6020A															
Calcium, Total, ICP-MS						12300		10	50	ug/L					
Chromium, Dissolved, ICP-MS						0.77	<RDL	0.2	1	ug/L					
Copper, Dissolved, ICP-MS						6.38		0.4	2	ug/L					
Lead, Dissolved, ICP-MS						0.24	<RDL	0.1	0.5	ug/L					
Magnesium, Total, ICP-MS						4370		10	50	ug/L					
Zinc, Dissolved, ICP-MS						28.8		0.5	2.5	ug/L					
MT EPA 200.8/SW846 6020A*SM2340B															
Hardness, Calc						48.6		0.066	0.331	mg CaCO3/L					
ES NONE															
Sample Information															

King County Environmental Lab Analytical Report

	Project:	421195-180					Project:	421195-180					Project:	421195-180					
	Locator:	MERCERISL32					Locator:	MERCERISL42					Locator:	FFBLANK					
	Descrip:	CREEK NEAR HOLLYHI					Descrip:	E. MERCER WAY					Descrip:	FIELD FILTER BLANK					
	Sample:	L49162-4					Sample:	L49162-5					Sample:	L49162-6					
	Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LM FILTER WTR					
	ColDate:	10/26/09 10:18					ColDate:	10/26/09 11:02					ColDate:	10/26/09 10:24					
	TimeSpan:						TimeSpan:						TimeSpan:						
	TotalSolid:						TotalSolid:						TotalSolid:						
	ClientLoc:						ClientLoc:						ClientLoc:						
	SampDepth:						SampDepth:						SampDepth:						
	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**
CV SM2540-D																
Total Suspended Solids		95		1.7	3.3	mg/L	666		5	10	mg/L					
ES NONE																
Conductivity, Field		64.3		0.5	10	umhos/cm	75.8		0.5	10	umhos/cm					
Discharge Rate of Stream		23.4		0.05	0.1	cfs	4.42		0.05	0.1	cfs					
Dissolved Oxygen Saturation, Field		99.5				%	96.4				%					
Dissolved Oxygen, Field		11		0.5	1	mg/L	10.8		0.5	1	mg/L					
Field Personnel		JD				none	JD				none					
Sample Temperature, Field		10.6				deg C	10				deg C					
Turbidity, Field		57.8		0.5	2	NTU	509		0.5	2	NTU					
pH, Field		7.39				pH	7.22				pH					
MC SM 9222D 20TH																
Fecal Coliform		900				CFU/100ml	1800				CFU/100ml					
MT EPA 200.8*SW846 6020A																
Calcium, Total, ICP-MS		6670		10	50	ug/L										
Chromium, Dissolved, ICP-MS		3.85		0.2	1	ug/L							<MDL	0.2	1	ug/L
Copper, Dissolved, ICP-MS		6.32		0.4	2	ug/L							<MDL	0.4	2	ug/L
Lead, Dissolved, ICP-MS			<MDL	0.1	0.5	ug/L							<MDL	0.1	0.5	ug/L
Magnesium, Total, ICP-MS		3070		10	50	ug/L										
Zinc, Dissolved, ICP-MS		18.1		0.5	2.5	ug/L						0.52	<RDL	0.5	2.5	ug/L
MT EPA 200.8/SW846 6020A*SM2340B																
Hardness, Calc		29.3		0.066	0.331	mg CaCO3/L										
ES NONE																
Sample Information												Metals Filter Blank				none

Login: P49162

WLRD-MERCER ISLAND WQ
STORM MONITORING

Personnel: JD

Project: 421195-180

CHAIN OF CUSTODY

RELINQUISHED BY [illegible]	Date 10/26/09	Time 1325
RECEIVED BY [illegible]	Date 10-26-09	Time 1325
Sample Number(s) 491621-6		(All)

SAMPLENUM	P49162-1	P49162-2	P49162-3
QC LINK			
LOCATOR	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	T_KC_MERCERSTRM-3
Locator Desc	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	FOREST AVE. AND 84TH AVE SE
SITE	KING COUNTY	KING COUNTY	KING COUNTY
COMMENTS	Need DOT Key	North Island	84th Ave-Weyburn-West Island
Start Date/Time	10/26/09 1230 ~~[illegible]~~	1210	10/26/09 951
End Date/Time			
Time Span			
Sample Depth			
COND, FIELD	119.8	93.2	60.0
DO SAT, FIELD	95.7	94.7	91.2
DO, FIELD	10.21	10.44	10.17
PERSONNEL	JD	JD	JD
PH, FIELD	7.29	7.53	7.23
SAMP TEMP	12.11	10.52 ~~7.53~~	10.46
STRM FLOW	3.44 CFS	3.70 CFS	4.89 CFS
TURB, FIELD	19.2	135	388
SAMP INFO	**********	**********	**********
Dept. Matrix Prod	3 LG TSS 5 LG FC-MF	3 LG TSS 5 LG FC-MF 6 LG CA-ICPMS 6 LG CR-ICPMS, DISS 6 LG CU-ICPMS, DISS 6 LG ICPMS-HARDNESS 6 LG MG-ICPMS 6 LG PB-ICPMS, DISS 6 LG ZN-ICPMS, DISS	3 LG TSS 5 LG FC-MF

Login: P49162

WLRD-MERCER ISLAND WQ
STORM MONITORING

Personnel:_____

Project: 421195-180

SAMPLENUM	P49162-4	P49162-5	P49162-6
QC LINK			FFB
LOCATOR	MERCERISL32	MERCERISL42	FFBLANK
Short Loc. Desc.	T_KC_MERCERSTRM-4	T_KC_MERCERSTRM-5	FFBLAN K
Locator Desc	CREEK NEAR HOLLYHILL DRIVE AND W. MERCER	E. MERCER WAY	FIELD FILTER BLANK
SITE	KING COUNTY	KING COUNTY	METRO
COMMENTS	Holly Hill Dr-West Island	Retention Stucture-East Island	Field filter blank Metals
Start Date/Time	1018	1102	1024
End Date/Time			
Time Span			
Sample Depth			
COND, FIELD	64.3	75.8	**********
DO SAT, FIELD	99.5	96.4	**********
DO, FIELD	10.93	10.84	**********
PERSONNEL	JD	JD	**********
PH, FIELD	7.39	7.22	**********
SAMP TEMP	10.63	10.02	**********
STRM FLOW	~~4.47~~ 23.4 CFS	4.42 CFS	**********
TURB, FIELD	57.8	509	**********
SAMP INFO	**********	**********	
Dept. Matrix Prod	3 LG TSS 5 LG FC-MF 6 LG CA-ICPMS 6 LG CR-ICPMS, DISS 6 LG CU-ICPMS, DISS 6 LG ICPMS-HARDNESS 6 LG MG-ICPMS 6 LG PB-ICPMS, DISS 6 LG ZN-ICPMS, DISS	3 LG TSS 5 LG FC-MF	6 LM CR-ICPMS, DISS 6 LM CU-ICPMS, DISS 6 LM PB-ICPMS, DISS 6 LM ZN-ICPMS, DISS

WG105693 (TSS - 421195) Department: 3 - Conventionals Move Date: 2009-11-16 09:57:51

Sample	Project	Project Des	List Type	Matrix	Collect Dat	Prep Date	Anal Date	QC Associa
L48790-1	421195-23	White Cent	CVTSS	STORM W	########	########	########	WG105693
L48790-2	421195-23	White Cent	CVTSS	STORM W	########	########	########	WG105693
L48790-3	421195-23	White Cent	CVTSS	STORM W	########	########	########	WG105693
L48790-4	421195-23	White Cent	CVTSS	STORM W	########	########	########	WG105693
L48790-5	421195-23	White Cent	CVTSS	STORM W	########	########	########	WG105693
L48790-6	421195-23	White Cent	CVTSS	STORM W	########	########	########	WG105693
L48790-7	421195-23	White Cent	CVTSS	STORM W	########	########	########	WG105693
L48790-8	421195-23	White Cent	CVTSS	STORM W	########	########	########	WG105693
L48790-9	421195-23	White Cent	CVTSS	STORM W	########	########	########	WG105693
L48790-10	421195-23	White Cent	CVTSS	STORM W	########	########	########	WG105693
L48790-11	421195-23	White Cent	CVTSS	STORM W	########	########	########	WG105693
L49162-1	421195-18	Mercer Isla	CVTSS	STORM W	########	########	########	WG105693
L49162-2	421195-18	Mercer Isla	CVTSS	STORM W	########	########	########	WG105693
L49162-3	421195-18	Mercer Isla	CVTSS	STORM W	########	########	########	WG105693
L49162-4	421195-18	Mercer Isla	CVTSS	STORM W	########	########	########	WG105693
L49162-5	421195-18	Mercer Isla	CVTSS	STORM W	########	########	########	WG105693
L49479-1	421195-11	Cottage La	CVTSS	STORM W	########	########	########	WG105693
L49479-2	421195-11	Cottage La	CVTSS	STORM W	########	########	########	WG105693
L49479-3	421195-11	Cottage La	CVTSS	STORM W	########	########	########	WG105693
L49479-4	421195-11	Cottage La	CVTSS	STORM W	########	########	########	WG105693
WG105693	MB		CVTSS	BLANK WTR		########	########	WG105693
WG105693	LCS		CVTSS	BLANK WTR		########	########	WG105693
WG105693	LD		CVTSS	STORM WTR		########	########	WG105693
WG105693	LD		CVTSS	STORM WTR		########	########	WG105693
WG105693	LD		CVTSS	STORM WTR		########	########	WG105693

WG105748 (Mercer Island Storm Oct.) Department: 2 - Environmental Services Move Date: 2009-11

Sample	Project	Project Des	List Type	Matrix	Collect Dat	Prep Date	Anal Date	QC Associa
L49162-1	421195-18	Mercer Isla	ESS	STORM W	########			WG105748
L49162-1	421195-18	Mercer Isla	ESS-FIELD	STORM W	########			WG105748
L49162-2	421195-18	Mercer Isla	ESS	STORM W	########			WG105748
L49162-2	421195-18	Mercer Isla	ESS-FIELD	STORM W	########			WG105748
L49162-3	421195-18	Mercer Isla	ESS	STORM W	########			WG105748
L49162-3	421195-18	Mercer Isla	ESS-FIELD	STORM W	########			WG105748
L49162-4	421195-18	Mercer Isla	ESS	STORM W	########			WG105748
L49162-4	421195-18	Mercer Isla	ESS-FIELD	STORM W	########			WG105748
L49162-5	421195-18	Mercer Isla	ESS	STORM W	########			WG105748
L49162-5	421195-18	Mercer Isla	ESS-FIELD	STORM W	########			WG105748
L49162-6	421195-18	Mercer Isla	ESS	BLANK WT	########			WG105748
WG105748	CS		ESS-FIELD	BLANK WTR				WG105748
WG105748	CS		ESS-FIELD	BLANK WTR				WG105748
WG105748	CS		ESS-FIELD	BLANK WTR				WG105748

WG105645 (Mercer Island Stormwater) Department: 5 - Microbiology Move Date: 2009-10-27 15:30:

Sample	Project	Project Des	List Type	Matrix	Collect Dat	Prep Date	Anal Date	QC Associa
L49162-1	421195-18	Mercer Isla	MCFC-MF	STORM W	########	########	########	WG105645
L49162-2	421195-18	Mercer Isla	MCFC-MF	STORM W	########	########	########	WG105645
L49162-3	421195-18	Mercer Isla	MCFC-MF	STORM W	########	########	########	WG105645
L49162-4	421195-18	Mercer Isla	MCFC-MF	STORM W	########	########	########	WG105645
L49162-5	421195-18	Mercer Isla	MCFC-MF	STORM W	########	########	########	WG105645
WG10564	LD		MCFC-MF	STORM WTR		########	########	WG10564
WG10564	PC		MCFC-MF	BLANK WTR		########	########	WG10564
WG10564	NC		MCFC-MF	BLANK WTR		########	########	WG10564
WG10564	BF		MCFC-MF	BLANK WTR		########	########	WG10564
WG10564	AF		MCFC-MF	BLANK WTR		########	########	WG10564

WG106100 (11/13/09 Misc Totals) Department: 6 - Metals Move Date: 2009-11-20 15:27:40

Sample	Project	Project Des	List Type	Matrix	Collect Dat	Prep Date	Anal Date	QC Associa
L48237-1	421600	South Plan	MTICPMS	STORM W	########	########	########	WG106100
L48237-2	421600	South Plan	MTICPMS	STORM W	########	########	########	WG106100
L48237-3	421600	South Plan	MTICPMS	STORM W	########	########	########	WG106100
L48397-1	421301A	Georgetow	MTHARD-I	STORM W	########	########	########	WG106100
L48397-1	421301A	Georgetow	MTICPMS	STORM W	########	########	########	WG106100
L48397-2	421301A	Georgetow	MTHARD-I	STORM W	########	########	########	WG106100
L48397-2	421301A	Georgetow	MTICPMS	STORM W	########	########	########	WG106100
L49162-2	421195-18	Mercer Isla	MTHARD-I	STORM W	########	########	########	WG106100
L49162-2	421195-18	Mercer Isla	MTICPMS	STORM W	########	########	########	WG106100
L49162-4	421195-18	Mercer Isla	MTHARD-I	STORM W	########	########	########	WG106100
L49162-4	421195-18	Mercer Isla	MTICPMS	STORM W	########	########	########	WG106100
L49397-1	421184-11	OCS-City c	MTICPMS	EFFLUENT	########	########	########	WG106100
L49397-3	421184-11	OCS-City c	MTICPMS	INFLUENT	########	########	########	WG106100
L49414-1	421879-21	NPDES SV	MTHARD-I	STORM W	########	########	########	WG106100
L49414-1	421879-21	NPDES SV	MTICPMS	STORM W	########	########	########	WG106100
L49417-1	423586-00	CSO Treat	MTHARD-I	INFLUENT	########	########	########	WG106100
L49417-1	423586-00	CSO Treat	MTICPMS	INFLUENT	########	########	########	WG106100
L49417-2	423586-00	CSO Treat	MTHARD-I	EFFLUENT	########	########	########	WG106100
L49417-2	423586-00	CSO Treat	MTICPMS	EFFLUENT	########	########	########	WG106100
L49417-3	423586-00	CSO Treat	MTHARD-I	EFFLUENT	########	########	########	WG106100
L49417-3	423586-00	CSO Treat	MTICPMS	EFFLUENT	########	########	########	WG106100
L49437-1	423586-00	CSO Treat	MTHARD-I	INFLUENT	########	########	########	WG106100
L49437-1	423586-00	CSO Treat	MTICPMS	INFLUENT	########	########	########	WG106100
L49437-2	423586-00	CSO Treat	MTHARD-I	EFFLUENT	########	########	########	WG106100
L49437-2	423586-00	CSO Treat	MTICPMS	EFFLUENT	########	########	########	WG106100
L49437-3	423586-00	CSO Treat	MTHARD-I	EFFLUENT	########	########	########	WG106100
L49437-3	423586-00	CSO Treat	MTICPMS	EFFLUENT	########	########	########	WG106100
L49437-4	423586-00	CSO Treat	MTHARD-I	EFFLUENT	########	########	########	WG106100
L49437-4	423586-00	CSO Treat	MTICPMS	EFFLUENT	########	########	########	WG106100
L49448-1	421879-22	NPDES SV	MTHARD-I	STORM W	########	########	########	WG106100
L49448-1	421879-22	NPDES SV	MTICPMS	STORM W	########	########	########	WG106100
L49448-2	421879-22	NPDES SV	MTHARD-I	STORM W	########	########	########	WG106100
L49448-2	421879-22	NPDES SV	MTICPMS	STORM W	########	########	########	WG106100
L49522-1	421422-CH	SWD-CHG	MTICPMS	GRND WT	########	########	########	WG106100
WG10610	MB		MTHARD-I	BLANK WTR		########	########	WG10610

WG10610(	MB		MTICPMS	BLANK WTR	########	########	WG10610(
WG10610(	SB		MTHARD-I	BLANK WTR	########	########	WG10610(
WG10610(	SB		MTICPMS	BLANK WTR	########	########	WG10610(
WG10610(	LD		MTHARD-I	EFFLUENT	########	########	WG10610(
WG10610(	LD		MTICPMS	EFFLUENT	########	########	WG10610(
WG10610(	MS		MTHARD-I	EFFLUENT	########	########	WG10610(
WG10610(	MS		MTICPMS	EFFLUENT	########	########	WG10610(
WG10610(	LD		MTICPMS	GRND WTR	########	########	WG10610(
WG10610(	MS		MTICPMS	GRND WTR	########	########	WG10610(

WG106219 (11/18/09 SWD roads Int Di) Department: 6 - Metals Move Date: 2009-11-20 10:18:03

Sample	Project	Project Des	List Type	Matrix	Collect Dat	Prep Date	Anal Date	QC Associa
L49162-2	421195-18	Mercer Isla	MTICPMS-	STORM W	########	########	########	WG106219
L49162-4	421195-18	Mercer Isla	MTICPMS-	STORM W	########	########	########	WG106219
L49162-6	421195-18	Mercer Isla	MTICPMS-	FILTER W	########	########	########	WG106219
L49467-1	421196-20	Roads BMI	MTICPMS-	STORM W	########	########	########	WG106219
L49467-2	421196-20	Roads BMI	MTICPMS-	STORM W	########	########	########	WG106219
L49467-3	421196-20	Roads BMI	MTICPMS-	STORM W	########	########	########	WG106219
L49467-4	421196-20	Roads BMI	MTICPMS-	STORM W	########	########	########	WG106219
L49467-10	421196-20	Roads BMI	MTICPMS-	FILTER W	########	########	########	WG106219
L49524-5	421422-VA	SWD-VAG	MTICPMS-	GRND WT	########	########	########	WG106219
L49540-1	421422-EN	SWD-ENG	MTICPMS-	GRND WT	########	########	########	WG106219
L49542-2	421422-VA	SWD-VAG	MTICPMS-	GRND WT	########	########	########	WG106219
L49542-4	421422-VA	SWD-VAG	MTICPMS-	GRND WT	########	########	########	WG106219
L49542-5	421422-VA	SWD-VAG	MTICPMS-	GRND WT	########	########	########	WG106219
L49542-6	421422-VA	SWD-VAG	MTICPMS-	GRND WT	########	########	########	WG106219
L49550-1	421422-VA	SWD-VAG	MTICPMS-	GRND WT	########	########	########	WG106219
L49550-2	421422-VA	SWD-VAG	MTICPMS-	GRND WT	########	########	########	WG106219
L49609-1	421422-EN	SWD-ENG	MTICPMS-	GRND WT	########	########	########	WG106219
L49609-3	421422-EN	SWD-ENG	MTICPMS-	GRND WT	########	########	########	WG106219
L49664-1	421422-CH	SWD-CHS	MTICPMS-	FRESH W	########	########	########	WG106219
WG10621	MB		MTICPMS-	BLANK WTR	########	########	WG10621
WG10621	SB		MTICPMS-	BLANK WTR	########	########	WG10621
WG10621	LD		MTICPMS-	STORM WTR	########	########	WG10621
WG10621	MS		MTICPMS-	STORM WTR	########	########	WG10621
WG10621	LD		MTICPMS-	GRND WTR	########	########	WG10621
WG10621	MS		MTICPMS-	GRND WTR	########	########	WG10621

* End of BATCH_L49162_24402B.xls

Comments
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L49162-1
L49479-1

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RANGE1
RANGE1

22

Comments
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QC-PERFORMED:26-OCT-09
QC-PERFORMED:26-OCT-09
QC-PERFORMED:26-OCT-09

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L49417-2 RPD-LIQ LAB DUPLICATE	
L49417-2 RPD-LIQ LAB DUPLICATE	
L49417-2 MS-20 MATRIX SPIKE	
L49417-2 MS-20 MATRIX SPIKE	
L49522-1 RPD-LIQ LAB DUPLICATE	
L49522-1 MS-20 MATRIX SPIKE	

	Comments
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METHOD BLANK	
WG106219-1 MS-20 SPIKE BLANK	
L49467-3 RPD-LIQ LAB DUPLICATE	
L49467-3 MS-20 MATRIX SPIKE	
L49542-4 RPD-LIQ LAB DUPLICATE	
L49542-4 MS-20 MATRIX SPIKE	

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Mon., L49162

Workgroup: WG105693 TSS

MB:WG105693-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG105693-2 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	93	93		80--120

LD:WG105693-3 L48790-2 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421195-230
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	46.8	47.2	1		25

LD:WG105693-4 L49162-1 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1.7	3.3	mg/L	216	210	3		25

LD:WG105693-5 L49479-1 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421195-110
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	0.8	1.6	mg/L	17.5	17.5	0		25

Workgroup: WG105748 Field Parameters

CS:WG105748-1 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE (Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	73.8	100		90--110
pH, Field			pH	6.86	6.85	0.01		0--.2

CS:WG105748-2 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE (Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	74.8	101		90--110
pH, Field			pH	6.86	6.9	0.04		0--.2

CS:WG105748-3 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE (Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	75	101		90--110
Dissolved Oxygen Saturation, Field			%	100	102.4	102		96--104
pH, Field			pH	6.86	6.91	0.05		0--.2

Workgroup: WG105645 Fecal Colirorm

LD:WG105645-1 L49162-3 Matrix: STORM WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	Rlog	P value	Qual
Fecal Coliform			CFU/100ml	22000	18000	0.09	0.28	N1

PC:WG105645-2 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG105645-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG105645-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG105645-5 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

Workgroup: WG106100 Total Metals & Hardness

MB:WG106100-1 Matrix: BLANK WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Hardness, Calc	0.066	0.331	mg CaCO3/L	<MDL	

MB:WG106100-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aluminum, Total, ICP-MS	2	10	ug/L	<MDL	
Antimony, Total, ICP-MS	0.3	1	ug/L	<MDL	
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Barium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Calcium, Total, ICP-MS	10	50	ug/L	<MDL	
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	
Cobalt, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	
Iron, Total, ICP-MS	10	50	ug/L	<MDL	
Magnesium, Total, ICP-MS	10	50	ug/L	<MDL	
Manganese, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Potassium, Total, ICP-MS	100	500	ug/L	<MDL	
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Sodium, Total, ICP-MS	20	100	ug/L	<MDL	
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	
Vanadium, Total, ICP-MS	0.075	0.375	ug/L	<MDL	
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	

SB:WG106100-2 MB:WG106100-1 Matrix: BLANK WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	<MDL	33.1	32.8	99		85--115

SB:WG106100-2 MB:WG106100-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP-MS	2	10	ug/L	<MDL	20	20.7	103		85--115
Antimony, Total, ICP-MS	0.3	1	ug/L	<MDL	20	20.4	102		85--115
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.2	101		85--115
Barium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.3	97		85--115
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.9	105		85--115
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.8	104		85--115
Calcium, Total, ICP-MS	10	50	ug/L	<MDL	5000	4890	98		85--115
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	19.6	98		85--115
Cobalt, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.1	95		85--115
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	20	20.3	102		85--115
Iron, Total, ICP-MS	10	50	ug/L	<MDL	5000	5000	100		85--115
Magnesium, Total, ICP-MS	10	50	ug/L	<MDL	5000	5010	100		85--115
Manganese, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.5	98		85--115
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	21.1	106		85--115
Potassium, Total, ICP-MS	100	500	ug/L	<MDL	5000	4980	100		85--115
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	21.1	106		85--115
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.8	104		85--115
Sodium, Total, ICP-MS	20	100	ug/L	<MDL	5000	4910	98		85--115
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	20	19.1	96		85--115
Vanadium, Total, ICP-MS	0.075	0.375	ug/L	<MDL	20	19.2	96		85--115
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	21.9	110		85--115

LD:WG106100-3 L49417-2 Matrix: EFFLUENT Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 423586-003-1
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	134	135	1		20

LD:WG106100-3 L49417-2 Matrix: EFFLUENT Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 423586-003-1
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Aluminum, Total, ICP-MS	2	10	ug/L	4070	4100	1		20
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	1.15	1.18	3		20
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	0.067	0.069			20
Calcium, Total, ICP-MS	10	50	ug/L	24000	24200	1		20
Chromium, Total, ICP-MS	0.2	1	ug/L	0.49	0.49			20
Copper, Total, ICP-MS	0.4	2	ug/L	12.9	13.1	2		20
Iron, Total, ICP-MS	10	50	ug/L	167	165	1		20
Magnesium, Total, ICP-MS	10	50	ug/L	18000	18100	1		20
Manganese, Total, ICP-MS	0.1	0.5	ug/L	41.2	41.3	0		20
Nickel, Total, ICP-MS	0.1	0.5	ug/L	2.64	2.71	2		20
Silver, Total, ICP-MS	0.05	0.25	ug/L	0.089	0.09			20
Zinc, Total, ICP-MS	0.5	2.5	ug/L	34.6	33.9	2		20

MS:WG106100-4 L49417-2 Matrix: EFFLUENT Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 423586-003-1
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	134	33.1	164	MS/MSD %Rec. due to 4x rule)		

MS:WG106100-4 L49417-2 Matrix: EFFLUENT Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 423586-003-1
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP-MS	2	10	ug/L	4070	20	4010			(No MS/MSD %Rec. due to 4x rule)
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	1.15	20	19.9	94		75--125
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	0.067	20	17.9	89		75--125
Calcium, Total, ICP-MS	10	50	ug/L	24000	5000	28500			(No MS/MSD %Rec. due to 4x rule)
Chromium, Total, ICP-MS	0.2	1	ug/L	0.49	20	18.5	90		75--125
Copper, Total, ICP-MS	0.4	2	ug/L	12.9	20	31.3	92		75--125
Iron, Total, ICP-MS	10	50	ug/L	167	5000	4780	92		75--125
Magnesium, Total, ICP-MS	10	50	ug/L	18000	5000	22500	90		75--125
Manganese, Total, ICP-MS	0.1	0.5	ug/L	41.2	20	58.9	89		75--125
Nickel, Total, ICP-MS	0.1	0.5	ug/L	2.64	20	22.2	98		75--125
Silver, Total, ICP-MS	0.05	0.25	ug/L	0.089	20	18.6	93		75--125
Zinc, Total, ICP-MS	0.5	2.5	ug/L	34.6	20	51.4	84		75--125

LD:WG106100-5 L49522-1 Matrix: GRND WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 421422-CHGW-OS
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Antimony, Total, ICP-MS	0.3	1	ug/L	<MDL	<MDL			20
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	0.45	0.46			20
Barium, Total, ICP-MS	0.05	0.25	ug/L	2.85	2.88	1		20
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Calcium, Total, ICP-MS	10	50	ug/L	14500	14700	1		20
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	<MDL			20
Cobalt, Total, ICP-MS	0.05	0.25	ug/L	0.075	0.082			20
Copper, Total, ICP-MS	0.4	2	ug/L	13.6	13.6	0		20
Iron, Total, ICP-MS	10	50	ug/L	170	180	6		20
Magnesium, Total, ICP-MS	10	50	ug/L	7030	7140	1		20
Manganese, Total, ICP-MS	0.1	0.5	ug/L	57.3	57.8	1		20
Nickel, Total, ICP-MS	0.1	0.5	ug/L	0.41	0.43			20
Potassium, Total, ICP-MS	100	500	ug/L	1020	1050	2		20
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Sodium, Total, ICP-MS	20	100	ug/L	5700	5730	0		20
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	<MDL			20
Vanadium, Total, ICP-MS	0.075	0.375	ug/L	2.07	2.12	2		20
Zinc, Total, ICP-MS	0.5	2.5	ug/L	137	138	1		20

MS:WG106100-6 L49522-1 Matrix: GRND WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 421422-CHGW-OS
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Antimony, Total, ICP-MS	0.3	1	ug/L	<MDL	20	19.9	99		75--125
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	0.45	20	19.6	96		75--125
Barium, Total, ICP-MS	0.05	0.25	ug/L	2.85	20	21.1	91		75--125
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	17.6	88		75--125
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	18.6	93		75--125
Calcium, Total, ICP-MS	10	50	ug/L	14500	5000	19500	102		75--125
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	18.6	93		75--125
Cobalt, Total, ICP-MS	0.05	0.25	ug/L	0.075	20	19.9	99		75--125
Copper, Total, ICP-MS	0.4	2	ug/L	13.6	20	32.6	95		75--125
Iron, Total, ICP-MS	10	50	ug/L	170	5000	4950	96		75--125
Magnesium, Total, ICP-MS	10	50	ug/L	7030	5000	11800	95		75--125
Manganese, Total, ICP-MS	0.1	0.5	ug/L	57.3	20	78.3	105		75--125
Nickel, Total, ICP-MS	0.1	0.5	ug/L	0.41	20	20.5	100		75--125
Potassium, Total, ICP-MS	100	500	ug/L	1020	5000	5890	97		75--125
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	18.5	93		75--125
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20	100		75--125
Sodium, Total, ICP-MS	20	100	ug/L	5700	5000	9950	85		75--125
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	20	18	90		75--125
Vanadium, Total, ICP-MS	0.075	0.375	ug/L	2.07	20	20.4	92		75--125
Zinc, Total, ICP-MS	0.5	2.5	ug/L	137	20	155			(No MS/MSD %Rec. due to 4x rule)

Workgroup: WG106219 Dissolved Metals

MB:WG106219-1 Matrix: BLANK WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Potassium, Dissolved, ICP-MS	100	500	ug/L	<MDL	
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Sodium, Dissolved, ICP-MS	20	100	ug/L	<MDL	
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	
Tin, Dissolved, ICP-MS	0.3	1.5	ug/L	<MDL	
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	

SB:WG106219-2 MB:WG106219-1 Matrix: BLANK WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	20	19.4	97		85--115
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.7	99		85--115
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.1	96		85--115
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.4	102		85--115
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.6	98		85--115
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4770	95		85--115
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	20	19.7	98		85--115
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20	100		85--115
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	20	20.6	103		85--115
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4860	97		85--115
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.2	101		85--115
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4730	95		85--115
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.1	100		85--115
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.9	99		85--115
Potassium, Dissolved, ICP-MS	100	500	ug/L	<MDL	5000	4820	96		85--115
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.9	104		85--115
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.2	96		85--115
Sodium, Dissolved, ICP-MS	20	100	ug/L	<MDL	5000	4760	95		85--115
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	20	20.4	102		85--115
Tin, Dissolved, ICP-MS	0.3	1.5	ug/L	<MDL	20	19.3	97		85--115
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	20	19.4	97		85--115
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.2	101		85--115

LD:WG106219-3 L49467-3 Matrix: STORM WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421196-200
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	0.39	0.39			20
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	0.22	0.2			20
Copper, Dissolved, ICP-MS	0.4	2	ug/L	2.47	2.46	1		20
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	0.18	0.18			20
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	0.46	0.46			20
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20
Tin, Dissolved, ICP-MS	0.3	1.5	ug/L	<MDL	<MDL			20
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	7.06	6.98	1		20

MS:WG106219-4 L49467-3 Matrix: STORM WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421196-200
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	0.39	20	20.5	100		75--125
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.4	97		75--125
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	0.22	20	19.4	96		75--125
Copper, Dissolved, ICP-MS	0.4	2	ug/L	2.47	20	22.4	100		75--125
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	0.18	20	19.6	97		75--125
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	0.46	20	19.8	97		75--125
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	22.5	113		75--125
Tin, Dissolved, ICP-MS	0.3	1.5	ug/L	<MDL	20	18.2	91		75--125
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	7.06	20	27.2	101		75--125

LD:WG106219-5 L49542-4 Matrix: GRND WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421422-VAGW
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	<MDL			20
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	1.65	1.62	2		20
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	3.22	3.21	0		20
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	0.1	0.07			20
Calcium, Dissolved, ICP-MS	10	50	ug/L	8470	8580	1		20
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	2.63	2.63	0		20
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	<MDL			20
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	<MDL			20
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Magnesium, Dissolved, ICP-MS	10	50	ug/L	7970	8090	1		20
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	0.626	0.593	5		20
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	0.32	0.3			20
Potassium, Dissolved, ICP-MS	100	500	ug/L	1310	1320	1		20
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Sodium, Dissolved, ICP-MS	20	100	ug/L	4450	4510	1		20
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	<MDL			20
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	3.84	3.9	1		20
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	2.4	0.78			20

MS:WG106219-6 L49542-4 Matrix: GRND WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421422-VAGW
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	20	19.7	98		75--125
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	1.65	20	21.8	101		75--125
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	3.22	20	22.5	96		75--125
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.5	103		75--125
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	0.1	20	19.8	98		75--125
Calcium, Dissolved, ICP-MS	10	50	ug/L	8470	5000	12900	89		75--125
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	2.63	20	21.7	96		75--125
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	18.4	92		75--125
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	20	20.2	101		75--125
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4740	95		75--125
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.5	102		75--125
Magnesium, Dissolved, ICP-MS	10	50	ug/L	7970	5000	12700	94		75--125
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	0.626	20	19.2	93		75--125
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	0.32	20	20	98		75--125
Potassium, Dissolved, ICP-MS	100	500	ug/L	1310	5000	6000	94		75--125
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	21.9	109		75--125
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19	95		75--125
Sodium, Dissolved, ICP-MS	20	100	ug/L	4450	5000	9290	97		75--125
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	20	20.5	102		75--125
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	3.84	20	22.9	95		75--125
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	2.4	20	21.3	94		75--125

^ For the following parameters, the values in RPD column are Absolute Difference:
pH, Field

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

December 4, 2009

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180
Mercer Island Stormwater Monitoring,
Stormwater Samples, L49496-1 to 6

Attached is the comprehensive report for the stormwater samples collected and delivered to the laboratory on November 5, 2009. The samples were analyzed in the Trace Metals, Microbiology and Conventionals units of the laboratory. A comprehensive report #13908 was send via email on December 4, 2009. QA/QC data summaries are included for your information.

Conventionals:
There were no anomalies associated with the preparation and the analysis of these samples.

Metals:
There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:
There were no anomalies associated with the preparation and the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

1202M

King County Environmental Lab Analytical Report

	Project:	423589-090-1					Project:	423589-090-1					Project:	423589-090-1							
	Locator:	CS030					Locator:	S070167					Locator:	LAB							
	Descrip:	HANFORD ST CSO/AKA					Descrip:	W MICHIGAN REG/CSO					Descrip:	LAB LOCATOR							
	Sample:	L49003-1					Sample:	L49003-2					Sample:	L49003-4							
	Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LM FILTER WTR							
	ColDate:	9/6/09 12:02					ColDate:	9/6/09 10:41					ColDate:	9/6/09 15:45							
	TimeSpan:	1.75					TimeSpan:	1					TimeSpan:								
	TotalSolid:						TotalSolid:						TotalSolid:								
	ClientLoc:						ClientLoc:						ClientLoc:								
	SampDepth:						SampDepth:						SampDepth:								
	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**						
CV EPA 160.4																					
Volatile Suspended Solids	56.7		4.2	8.3	mg/L	124		5.6	11	mg/L											
CV KEROUEL & AMINOT 1997																					
Ammonia Nitrogen	4.87		0.25	0.5	mg/L	4.13		0.25	0.5	mg/L											
CV SM2320-B																					
Total Alkalinity	43.2		1	5	mg CaCO3/L	42.4		1	5	mg CaCO3/L											
CV SM2540-D																					
Total Suspended Solids	108		4.2	8.3	mg/L	297		5.6	11	mg/L											
CV SM4110B CL																					
Chloride	31.6		0.5	1	mg/L	43		0.5	1	mg/L											
CV SM4500-N-C																					
Total Nitrogen	9.79		1.5	3	mg/L	12		1	2	mg/L											
CV SM4500-NO3-F																					
Nitrite + Nitrate Nitrogen	0.747		0.05	0.2	mg/L	0.944		0.05	0.2	mg/L											
CV SM4500-P-B,F																					
Total Phosphorus	1.77		0.15	0.3	mg/L	2.24		0.1	0.2	mg/L											
CV SM5220-D																					
Chemical Oxygen Demand	155	H	5	10	mg/L	281	H	5	10	mg/L											
CV SM5310-B																					
Dissolved Organic Carbon	15.8		5	10	mg/L	12.7		0.5	1	mg/L											
Total Organic Carbon	33.6		13	25	mg/L	54.5		10	20	mg/L											
MT EPA 200.8*SW846 6020A																					
Arsenic, Dissolved, ICP-MS	1.73		0.1	0.5	ug/L	1.12		0.1	0.5	ug/L		<MDL	0.1	0.5	ug/L						
Arsenic, Total, ICP-MS	2.68		0.1	0.5	ug/L	3.71		0.1	0.5	ug/L											
Cadmium, Dissolved, ICP-MS		<MDL	0.05	0.25	ug/L		<MDL	0.05	0.25	ug/L		<MDL	0.05	0.25	ug/L						
Cadmium, Total, ICP-MS	0.296		0.05	0.25	ug/L	0.447		0.05	0.25	ug/L											
Calcium, Dissolved, ICP-MS	7900		10	50	ug/L	6950		10	50	ug/L		<MDL	10	50	ug/L						
Calcium, Total, ICP-MS	9920		10	50	ug/L	12100		10	50	ug/L											
Chromium, Dissolved, ICP-MS	0.71	<RDL	0.2	1	ug/L	0.28	<RDL	0.2	1	ug/L		<MDL	0.2	1	ug/L						
Chromium, Total, ICP-MS	5.84		0.2	1	ug/L	13.3		0.2	1	ug/L											
Copper, Dissolved, ICP-MS	3.1		0.4	2	ug/L	1.6	<RDL	0.4	2	ug/L		<MDL	0.4	2	ug/L						
Copper, Total, ICP-MS	40		0.4	2	ug/L	65.6		0.4	2	ug/L											
Iron, Dissolved, ICP-MS	113		10	50	ug/L	79		10	50	ug/L		<MDL	10	50	ug/L						
Iron, Total, ICP-MS	2430		10	50	ug/L	5770		10	50	ug/L											
Lead, Dissolved, ICP-MS	0.49	<RDL	0.1	0.5	ug/L	0.23	<RDL	0.1	0.5	ug/L		<MDL	0.1	0.5	ug/L						
Lead, Total, ICP-MS	21		0.1	0.5	ug/L	52.5		0.1	0.5	ug/L											
Magnesium, Dissolved, ICP-MS	2770		10	50	ug/L	857		10	50	ug/L		<MDL	10	50	ug/L						
Magnesium, Total, ICP-MS	3750		10	50	ug/L	2800		10	50	ug/L											
Manganese, Dissolved, ICP-MS	35.5		0.1	0.5	ug/L	29.5		0.1	0.5	ug/L		<MDL	0.1	0.5	ug/L						
Manganese, Total, ICP-MS	78.6		0.1	0.5	ug/L	139		0.1	0.5	ug/L											
Nickel, Dissolved, ICP-MS	1.54		0.1	0.5	ug/L	0.771		0.1	0.5	ug/L		<MDL	0.1	0.5	ug/L						

King County Environmental Lab Analytical Report

	Project:	423589-090-1					Project:	423589-090-1					Project:	423589-090-1							
	Locator:	CS030					Locator:	S070167					Locator:	LAB							
	Descrip:	HANFORD ST CSO/AKA					Descrip:	W MICHIGAN REG/CSO					Descrip:	LAB LOCATOR							
	Sample:	L49003-1					Sample:	L49003-2					Sample:	L49003-4							
	Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LM FILTER WTR							
	ColDate:	9/6/09 12:02					ColDate:	9/6/09 10:41					ColDate:	9/6/09 15:45							
	TimeSpan:	1.75					TimeSpan:	1					TimeSpan:								
	TotalSolid:						TotalSolid:						TotalSolid:								
	ClientLoc:						ClientLoc:						ClientLoc:								
	SampDepth:						SampDepth:						SampDepth:								
	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**						
Nickel, Total, ICP-MS	6.74		0.1	0.5	ug/L	11.8		0.1	0.5	ug/L											
Silver, Dissolved, ICP-MS		<MDL	0.05	0.25	ug/L		<MDL	0.05	0.25	ug/L		<MDL	0.05	0.25	ug/L						
Silver, Total, ICP-MS	0.23	<RDL	0.05	0.25	ug/L	0.18	<RDL	0.05	0.25	ug/L											
Zinc, Dissolved, ICP-MS	13.7		0.5	2.5	ug/L	5.72		0.5	2.5	ug/L		<MDL	0.5	2.5	ug/L						
Zinc, Total, ICP-MS	140		0.5	2.5	ug/L	215		0.5	2.5	ug/L											
MT EPA 245.1*SW846 7470A																					
Mercury, Dissolved, CVAA		<MDL	0.005	0.015	ug/L		<MDL	0.005	0.015	ug/L		<MDL	0.005	0.015	ug/L						
Mercury, Total, CVAA	0.0943	J	0.005	0.015	ug/L	0.0982	J	0.005	0.015	ug/L											
OR SW846 3520C*SW846 8081B																					
4,4'-DDD		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
4,4'-DDE		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
4,4'-DDT		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Aldrin		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Alpha-BHC		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Alpha-Chlordane		<MDL	0.12	0.236	ug/L		<MDL	0.12	0.236	ug/L											
Beta-BHC		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Chlordane		<MDL	0.12	0.236	ug/L		<MDL	0.12	0.236	ug/L											
Delta-BHC		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Dieldrin		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Endosulfan I		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Endosulfan II		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Endosulfan Sulfate		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Endrin		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Endrin Aldehyde		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Gamma-BHC (Lindane)		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Gamma-Chlordane		<MDL	0.12	0.236	ug/L		<MDL	0.12	0.236	ug/L											
Heptachlor		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Heptachlor Epoxide		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Methoxychlor		<MDL	0.12	0.236	ug/L		<MDL	0.12	0.236	ug/L											
Toxaphene		<MDL	0.24	0.472	ug/L		<MDL	0.24	0.472	ug/L											
OR SW846 3520C*SW846 8270D																					
1,2,4-Trichlorobenzene	0.0631		0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
1,2-Dichlorobenzene		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
1,2-Diphenylhydrazine		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
1,3-Dichlorobenzene		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
1,4-Dichlorobenzene	96.2		0.024	0.0472	ug/L	3.15		0.024	0.0472	ug/L											
2,4,5-Trichlorophenol		<MDL	0.24	0.472	ug/L		<MDL	0.24	0.472	ug/L											
2,4,6-Trichlorophenol		<MDL	0.24	0.472	ug/L		<MDL	0.24	0.472	ug/L											
2,4-Dichlorophenol		<MDL	0.047	0.0943	ug/L		<MDL	0.047	0.0943	ug/L											
2,4-Dimethylphenol		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
2,4-Dinitrophenol		<MDL	0.24	0.943	ug/L		<MDL	0.24	0.943	ug/L											

King County Environmental Lab Analytical Report

	Project:	423589-090-1					Project:	423589-090-1					Project:	423589-090-1							
	Locator:	CS030					Locator:	S070167					Locator:	LAB							
	Descrip:	HANFORD ST CSO/AKA					Descrip:	W MICHIGAN REG/CSO					Descrip:	LAB LOCATOR							
	Sample:	L49003-1					Sample:	L49003-2					Sample:	L49003-4							
	Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LM FILTER WTR							
	ColDate:	9/6/09 12:02					ColDate:	9/6/09 10:41					ColDate:	9/6/09 15:45							
	TimeSpan:	1.75					TimeSpan:	1					TimeSpan:								
	TotalSolid:						TotalSolid:						TotalSolid:								
	ClientLoc:						ClientLoc:						ClientLoc:								
	SampDepth:						SampDepth:						SampDepth:								
	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**						
2,4-Dinitrotoluene		<MDL	0.24	0.472	ug/L		<MDL	0.24	0.472	ug/L											
2,6-Dinitrotoluene		<MDL	0.24	0.472	ug/L		<MDL	0.24	0.472	ug/L											
2-Chloronaphthalene		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
2-Chlorophenol		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
2-Methylnaphthalene	0.0929		0.024	0.0472	ug/L	0.0737		0.024	0.0472	ug/L											
2-Methylphenol	0.168		0.024	0.0472	ug/L	0.488		0.024	0.0472	ug/L											
2-Nitroaniline		<MDL	0.24	0.472	ug/L		<MDL	0.24	0.472	ug/L											
2-Nitrophenol		<MDL	0.094	0.189	ug/L		<MDL	0.094	0.189	ug/L											
3,3'-Dichlorobenzidine		<MDL	0.094	0.189	ug/L		<MDL	0.094	0.189	ug/L											
3-Methylphenol		<MDL	0.047	0.0943	ug/L		<MDL	0.047	0.0943	ug/L											
3-Nitroaniline		<MDL	0.24	0.472	ug/L		<MDL	0.24	0.472	ug/L											
4,6-Dinitro-O-Cresol		<MDL	0.24	0.943	ug/L		<MDL	0.24	0.943	ug/L											
4-Bromophenyl Phenyl Ether		<MDL	0.047	0.0943	ug/L		<MDL	0.047	0.0943	ug/L											
4-Chloro-3-Methylphenol		<MDL	0.094	0.189	ug/L		<MDL	0.094	0.189	ug/L											
4-Chloroaniline		<MDL	0.047	0.0943	ug/L		<MDL	0.047	0.0943	ug/L											
4-Chlorophenyl Phenyl Ether		<MDL	0.047	0.0943	ug/L		<MDL	0.047	0.0943	ug/L											
4-Methylphenol	10.3		0.047	0.0943	ug/L	2.42		0.047	0.0943	ug/L											
4-Nitroaniline		<MDL	0.24	0.472	ug/L		<MDL	0.24	0.472	ug/L											
4-Nitrophenol		<MDL	0.24	0.472	ug/L		<MDL	0.24	0.472	ug/L											
Acenaphthene		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L											
Acenaphthylene		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L											
Aniline		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Anthracene	0.0294		0.0094	0.0189	ug/L	0.0337		0.0094	0.0189	ug/L											
Benzo(a)anthracene	0.057		0.0094	0.0189	ug/L	0.0948		0.0094	0.0189	ug/L											
Benzo(a)pyrene		<MDL	0.0094	0.0189	ug/L	0.138		0.0094	0.0189	ug/L											
Benzo(b)fluoranthene		<MDL	0.0094	0.0189	ug/L	0.18		0.0094	0.0189	ug/L											
Benzo(g,h,i)perylene		<MDL	0.0094	0.0189	ug/L	0.0787		0.0094	0.0189	ug/L											
Benzo(k)fluoranthene		<MDL	0.0094	0.0189	ug/L	0.14		0.0094	0.0189	ug/L											
Benzoic Acid	7.28		0.24	0.472	ug/L	3.94		0.24	0.472	ug/L											
Benzyl Alcohol	2.24		0.094	0.189	ug/L	0.675		0.094	0.189	ug/L											
Benzyl Butyl Phthalate	0.733		0.047	0.0943	ug/L	0.364		0.047	0.0943	ug/L											
Bis(2-Chloroethoxy)Methane		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Bis(2-Chloroethyl)Ether		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Bis(2-Chloroisopropyl)Ether		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Bis(2-Ethylhexyl)Phthalate	5.55		0.024	0.472	ug/L	5.24		0.024	0.472	ug/L											
Caffeine	19.3		0.024	0.0472	ug/L	11.4		0.024	0.0472	ug/L											
Carbazole		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Chrysene	0.0799		0.0094	0.0189	ug/L	0.189		0.0094	0.0189	ug/L											
Coprostanol	23.5		0.47	0.943	ug/L	23.2		0.47	0.943	ug/L											
Di-N-Butyl Phthalate	0.207		0.024	0.0472	ug/L	0.121		0.024	0.0472	ug/L											
Di-N-Octyl Phthalate		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											

King County Environmental Lab Analytical Report

	Project:	423589-090-1					Project:	423589-090-1					Project:	423589-090-1							
	Locator:	CS030					Locator:	S070167					Locator:	LAB							
	Descrip:	HANFORD ST CSO/AKA					Descrip:	W MICHIGAN REG/CSO					Descrip:	LAB LOCATOR							
	Sample:	L49003-1					Sample:	L49003-2					Sample:	L49003-4							
	Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LM FILTER WTR							
	ColDate:	9/6/09 12:02					ColDate:	9/6/09 10:41					ColDate:	9/6/09 15:45							
	TimeSpan:	1.75					TimeSpan:	1					TimeSpan:								
	TotalSolid:						TotalSolid:						TotalSolid:								
	ClientLoc:						ClientLoc:						ClientLoc:								
	SampDepth:						SampDepth:						SampDepth:								
	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**						
Dibenzo(a,h)anthracene		<MDL	0.0094	0.0189	ug/L	0.0297		0.0094	0.0189	ug/L											
Dibenzofuran		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Diethyl Phthalate	0.829		0.024	0.472	ug/L	1.27		0.024	0.472	ug/L											
Dimethyl Phthalate		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Fluoranthene	0.0847		0.0094	0.0189	ug/L	0.194		0.0094	0.0189	ug/L											
Fluorene		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L											
Hexachlorobenzene		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Hexachlorobutadiene		<MDL	0.047	0.0943	ug/L		<MDL	0.047	0.0943	ug/L											
Hexachlorocyclopentadiene		<MDL	0.24	0.472	ug/L		<MDL	0.24	0.472	ug/L											
Hexachloroethane		<MDL	0.047	0.0943	ug/L		<MDL	0.047	0.0943	ug/L											
Indeno(1,2,3-Cd)Pyrene		<MDL	0.0094	0.0189	ug/L	0.0865		0.0094	0.0189	ug/L											
Isophorone		<MDL	0.047	0.0943	ug/L		<MDL	0.047	0.0943	ug/L											
N-Nitrosodi-N-Propylamine		<MDL	0.047	0.0943	ug/L		<MDL	0.047	0.0943	ug/L											
N-Nitrosodimethylamine		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
N-Nitrosodiphenylamine		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Naphthalene	0.107		0.0094	0.0189	ug/L	0.0818		0.0094	0.0189	ug/L											
Nitrobenzene		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L											
Pentachlorophenol		<MDL	0.24	0.472	ug/L		<MDL	0.24	0.472	ug/L											
Phenanthrene	0.147		0.0094	0.0236	ug/L	0.134		0.0094	0.0236	ug/L											
Phenol	2.99		0.024	0.0472	ug/L	0.636		0.024	0.0472	ug/L											
Pyrene	0.115		0.0094	0.0189	ug/L	0.238		0.0094	0.0189	ug/L											
Pyridine		<MDL	0.047	0.0943	ug/L		<MDL	0.047	0.0943	ug/L											
Bis(2-ethylhexyl)adipate																					
Bisphenol A																					
Total 4-Nonylphenol																					

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	Project:	423589-090-1					Project:	423589-090-1					Project:	423589-090-1							
	Locator:	S070167					Locator:	KINGDOME REGULATOR					Locator:	'063053							
	Descrip:	W MICHIGAN REG/CSO					Descrip:	KINGDOME REGULATOR					Descrip:	BRANDON ST OUTFALL							
	Sample:	L49199-3					Sample:	L49199-5					Sample:	L49487-1							
	Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LG STORM WTR							
	ColDate:	10/13/09 22:11					ColDate:	10/16/09 20:43					ColDate:	10/26/09 9:36							
	TimeSpan:	1					TimeSpan:	1					TimeSpan:	2							
	TotalSolid:						TotalSolid:						TotalSolid:								
	ClientLoc:						ClientLoc:						ClientLoc:								
	SampDepth:						SampDepth:						SampDepth:								
	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**						
CV EPA 160.4																					
Volatile Suspended Solids	380		25	50	mg/L	49.3		3.3	6.7	mg/L	15		2.5	5	mg/L						
CV KEROUEL & AMINOT 1997																					
Ammonia Nitrogen	14		1	2	mg/L	0.659		0.05	0.1	mg/L	0.245		0.005	0.01	mg/L						
CV SM2320-B																					
Total Alkalinity	95		1	5	mg CaCO3/L	23.8		1	5	mg CaCO3/L	13.3		1	5	mg CaCO3/L						
CV SM2540-D																					
Total Suspended Solids	880		25	50	mg/L	99.3		3.3	6.7	mg/L	61.5		2.5	5	mg/L						
CV SM4110B CL																					
Chloride	124		1.3	2.5	mg/L	11.4		0.5	1	mg/L	1.25		0.05	0.1	mg/L						
CV SM4500-N-C																					
Total Nitrogen	25.2		0.75	1.5	mg/L	4.98		0.25	0.5	mg/L	1.08		0.05	0.1	mg/L						
CV SM4500-NO3-F																					
Nitrite + Nitrate Nitrogen	0.012	<RDL	0.01	0.04	mg/L	0.189		0.01	0.04	mg/L	0.0937		0.01	0.04	mg/L						
CV SM4500-P-B,F																					
Total Phosphorus	5.32		0.075	0.15	mg/L	1.15		0.15	0.3	mg/L	0.192		0.005	0.01	mg/L						
CV SM5220-D																					
Chemical Oxygen Demand	836	H	5	10	mg/L	123		5	10	mg/L	28		5	10	mg/L						
CV SM5310-B																					
Dissolved Organic Carbon	30.7		5	10	mg/L	22.2		0.5	1	mg/L	4.3		0.5	1	mg/L						
Total Organic Carbon	192		25	50	mg/L	38.9		5	10	mg/L	12.9		1.5	3	mg/L						
MT EPA 200.8*SW846 6020A																					
Arsenic, Dissolved, ICP-MS	2.26		0.1	0.5	ug/L	0.976		0.1	0.5	ug/L	0.45	<RDL	0.1	0.5	ug/L						
Arsenic, Total, ICP-MS	11.2		0.1	0.5	ug/L	1.85		0.1	0.5	ug/L	1.24		0.1	0.5	ug/L						
Cadmium, Dissolved, ICP-MS		<MDL	0.05	0.25	ug/L	0.1	<RDL	0.05	0.25	ug/L		<MDL	0.05	0.25	ug/L						
Cadmium, Total, ICP-MS	1.47		0.05	0.25	ug/L	0.337		0.05	0.25	ug/L	0.25	<RDL	0.05	0.25	ug/L						
Calcium, Dissolved, ICP-MS	13900		10	50	ug/L	6980		10	50	ug/L	3000		10	50	ug/L						
Calcium, Total, ICP-MS	23600		10	50	ug/L	7840		10	50	ug/L	4610		10	50	ug/L						
Chromium, Dissolved, ICP-MS	0.3	<RDL	0.2	1	ug/L	0.62	<RDL	0.2	1	ug/L	0.67	<RDL	0.2	1	ug/L						
Chromium, Total, ICP-MS	38.7		0.2	1	ug/L	6.31		0.2	1	ug/L	5.47		0.2	1	ug/L						
Copper, Dissolved, ICP-MS	1.9	<RDL	0.4	2	ug/L	5.71		0.4	2	ug/L	4.58		0.4	2	ug/L						
Copper, Total, ICP-MS	139		0.4	2	ug/L	42.9		0.4	2	ug/L	24.9		0.4	2	ug/L						
Iron, Dissolved, ICP-MS	294		10	50	ug/L	46	<RDL	10	50	ug/L	45	<RDL	10	50	ug/L						
Iron, Total, ICP-MS	17800		10	50	ug/L	2690		10	50	ug/L	2310		10	50	ug/L						
Lead, Dissolved, ICP-MS	0.38	<RDL	0.1	0.5	ug/L	0.33	<RDL	0.1	0.5	ug/L	0.4	<RDL	0.1	0.5	ug/L						
Lead, Total, ICP-MS	162		0.1	0.5	ug/L	19.5		0.1	0.5	ug/L	14		0.1	0.5	ug/L						
Magnesium, Dissolved, ICP-MS	1640		10	50	ug/L	1130		10	50	ug/L	196		10	50	ug/L						
Magnesium, Total, ICP-MS	7540		10	50	ug/L	1810		10	50	ug/L	845		10	50	ug/L						
Manganese, Dissolved, ICP-MS	89.1		0.1	0.5	ug/L	18.4		0.1	0.5	ug/L	5.69		0.1	0.5	ug/L						
Manganese, Total, ICP-MS	341		0.1	0.5	ug/L	51.3		0.1	0.5	ug/L	49.3		0.1	0.5	ug/L						
Nickel, Dissolved, ICP-MS	2.2		0.1	0.5	ug/L	2.7		0.1	0.5	ug/L	3.19		0.1	0.5	ug/L						

King County Environmental Lab Analytical Report

	Project:	423589-090-1					Project:	423589-090-1					Project:	423589-090-1							
	Locator:	S070167					Locator:	KINGDOME REGULATOR					Locator:	'063053							
	Descrip:	W MICHIGAN REG/CSO					Descrip:	KINGDOME REGULATOR					Descrip:	BRANDON ST OUTFALL							
	Sample:	L49199-3					Sample:	L49199-5					Sample:	L49487-1							
	Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LG STORM WTR							
	ColDate:	10/13/09 22:11					ColDate:	10/16/09 20:43					ColDate:	10/26/09 9:36							
	TimeSpan:	1					TimeSpan:	1					TimeSpan:	2							
	TotalSolid:						TotalSolid:						TotalSolid:								
	ClientLoc:						ClientLoc:						ClientLoc:								
	SampDepth:						SampDepth:						SampDepth:								
	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**						
Nickel, Total, ICP-MS	37.2		0.1	0.5	ug/L	7.05		0.1	0.5	ug/L	8.2		0.1	0.5	ug/L						
Silver, Dissolved, ICP-MS		<MDL	0.05	0.25	ug/L		<MDL	0.05	0.25	ug/L		<MDL	0.05	0.25	ug/L						
Silver, Total, ICP-MS	0.589		0.05	0.25	ug/L	0.2	<RDL	0.05	0.25	ug/L	0.12	<RDL	0.05	0.25	ug/L						
Zinc, Dissolved, ICP-MS	6.08		0.5	2.5	ug/L	34		0.5	2.5	ug/L	20.9		0.5	2.5	ug/L						
Zinc, Total, ICP-MS	636		2.5	12.5	ug/L	134		0.5	2.5	ug/L	100		0.5	2.5	ug/L						
MT EPA 245.1*SW846 7470A																					
Mercury, Dissolved, CVAA		<MDL	0.005	0.015	ug/L		<MDL	0.005	0.015	ug/L		<MDL	0.005	0.015	ug/L						
Mercury, Total, CVAA	0.201		0.015	0.045	ug/L	0.0514		0.005	0.015	ug/L	0.017		0.005	0.015	ug/L						
OR SW846 3520C*SW846 8081B																					
4,4'-DDD		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
4,4'-DDE		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
4,4'-DDT		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Aldrin		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Alpha-BHC		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Alpha-Chlordane		<MDL	0.12	0.236	ug/L							<MDL	0.12	0.236	ug/L						
Beta-BHC		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Chlordane		<MDL	0.12	0.236	ug/L							<MDL	0.12	0.236	ug/L						
Delta-BHC		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Dieldrin		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Endosulfan I		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Endosulfan II		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Endosulfan Sulfate		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Endrin		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Endrin Aldehyde		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Gamma-BHC (Lindane)		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Gamma-Chlordane		<MDL	0.12	0.236	ug/L							<MDL	0.12	0.236	ug/L						
Heptachlor		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Heptachlor Epoxide		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Methoxychlor		<MDL	0.12	0.236	ug/L							<MDL	0.12	0.236	ug/L						
Toxaphene		<MDL	0.24	0.472	ug/L							<MDL	0.24	0.472	ug/L						
OR SW846 3520C*SW846 8270D																					
1,2,4-Trichlorobenzene		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
1,2-Dichlorobenzene		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
1,2-Diphenylhydrazine		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
1,3-Dichlorobenzene		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
1,4-Dichlorobenzene	0.467		0.024	0.0472	ug/L		<MDL	0.0047	0.00943	ug/L	0.174		0.024	0.0472	ug/L						
2,4,5-Trichlorophenol		<MDL	0.24	0.472	ug/L							<MDL	0.24	0.472	ug/L						
2,4,6-Trichlorophenol		<MDL	0.24	0.472	ug/L							<MDL	0.24	0.472	ug/L						
2,4-Dichlorophenol		<MDL	0.047	0.0943	ug/L							<MDL	0.047	0.0943	ug/L						
2,4-Dimethylphenol		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
2,4-Dinitrophenol		<MDL	0.24	0.943	ug/L							<MDL	0.24	0.943	ug/L						

King County Environmental Lab Analytical Report

	Project:	423589-090-1					Project:	423589-090-1					Project:	423589-090-1							
	Locator:	S070167					Locator:	KINGDOME REGULATOR					Locator:	'063053							
	Descrip:	W MICHIGAN REG/CSO					Descrip:	KINGDOME REGULATOR					Descrip:	BRANDON ST OUTFALL							
	Sample:	L49199-3					Sample:	L49199-5					Sample:	L49487-1							
	Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LG STORM WTR							
	ColDate:	10/13/09 22:11					ColDate:	10/16/09 20:43					ColDate:	10/26/09 9:36							
	TimeSpan:	1					TimeSpan:	1					TimeSpan:	2							
	TotalSolid:						TotalSolid:						TotalSolid:								
	ClientLoc:						ClientLoc:						ClientLoc:								
	SampDepth:						SampDepth:						SampDepth:								
	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**						
2,4-Dinitrotoluene		<MDL	0.24	0.472	ug/L							<MDL	0.24	0.472	ug/L						
2,6-Dinitrotoluene		<MDL	0.24	0.472	ug/L							<MDL	0.24	0.472	ug/L						
2-Chloronaphthalene		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
2-Chlorophenol		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
2-Methylnaphthalene	0.353		0.024	0.0472	ug/L		<MDL	0.0094	0.0189	ug/L	0.028	<RDL	0.024	0.0472	ug/L						
2-Methylphenol	9.54		0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
2-Nitroaniline		<MDL	0.24	0.472	ug/L							<MDL	0.24	0.472	ug/L						
2-Nitrophenol		<MDL	0.094	0.189	ug/L							<MDL	0.094	0.189	ug/L						
3,3'-Dichlorobenzidine		<MDL	0.094	0.189	ug/L							<MDL	0.094	0.189	ug/L						
3-Methylphenol		<MDL	0.047	0.0943	ug/L							<MDL	0.047	0.0943	ug/L						
3-Nitroaniline		<MDL	0.24	0.472	ug/L							<MDL	0.24	0.472	ug/L						
4,6-Dinitro-O-Cresol		<MDL	0.24	0.943	ug/L							<MDL	0.24	0.943	ug/L						
4-Bromophenyl Phenyl Ether		<MDL	0.047	0.0943	ug/L							<MDL	0.047	0.0943	ug/L						
4-Chloro-3-Methylphenol		<MDL	0.094	0.189	ug/L							<MDL	0.094	0.189	ug/L						
4-Chloroaniline		<MDL	0.047	0.0943	ug/L							<MDL	0.047	0.0943	ug/L						
4-Chlorophenyl Phenyl Ether		<MDL	0.047	0.0943	ug/L							<MDL	0.047	0.0943	ug/L						
4-Methylphenol	30.3		0.047	0.0943	ug/L		<MDL	0.047	0.0943	ug/L	0.332		0.047	0.0943	ug/L						
4-Nitroaniline		<MDL	0.24	0.472	ug/L							<MDL	0.24	0.472	ug/L						
4-Nitrophenol		<MDL	0.24	0.472	ug/L							<MDL	0.24	0.472	ug/L						
Acenaphthene		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L						
Acenaphthylene		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L						
Aniline		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Anthracene	0.0542		0.0094	0.0189	ug/L	0.0747		0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L						
Benzo(a)anthracene	0.238		0.0094	0.0189	ug/L	0.0555		0.0094	0.0189	ug/L	0.0573		0.0094	0.0189	ug/L						
Benzo(a)pyrene	0.256		0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L						
Benzo(b)fluoranthene	0.325		0.0094	0.0189	ug/L	0.111		0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L						
Benzo(g,h,i)perylene	0.226		0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L						
Benzo(k)fluoranthene	0.312		0.0094	0.0189	ug/L	0.0607		0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L						
Benzoic Acid	48.9		0.24	0.472	ug/L						8.8		0.24	0.472	ug/L						
Benzyl Alcohol		<MDL	0.094	0.189	ug/L	27.5		0.047	0.0943	ug/L		<MDL	0.094	0.189	ug/L						
Benzyl Butyl Phthalate	0.798		0.047	0.0943	ug/L	1.41		0.047	0.0943	ug/L	1.04		0.047	0.0943	ug/L						
Bis(2-Chloroethoxy)Methane		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Bis(2-Chloroethyl)Ether		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Bis(2-Chloroisopropyl)Ether		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Bis(2-Ethylhexyl)Phthalate	6.22		0.024	0.472	ug/L	3.31		0.024	0.0472	ug/L	2.98	B	0.024	0.472	ug/L						
Caffeine	7.01		0.024	0.0472	ug/L	5.13		0.0094	0.0189	ug/L	2.68		0.024	0.0472	ug/L						
Carbazole	0.136		0.024	0.0472	ug/L		<MDL	0.0094	0.0189	ug/L		<MDL	0.024	0.0472	ug/L						
Chrysene	0.361		0.0094	0.0189	ug/L	0.0984		0.0094	0.0189	ug/L	0.102		0.0094	0.0189	ug/L						
Coprostanol		<MDL	0.47	0.943	ug/L							<MDL	0.47	0.943	ug/L						
Di-N-Butyl Phthalate	0.166		0.024	0.0472	ug/L	0.345		0.024	0.0472	ug/L	0.242		0.024	0.0472	ug/L						
Di-N-Octyl Phthalate		<MDL	0.024	0.0472	ug/L		<MDL	0.024	0.0472	ug/L	1.35		0.024	0.0472	ug/L						

King County Environmental Lab Analytical Report

Project:	423589-090-1					Project:	423589-090-1					Project:	423589-090-1								
Locator:	S070167					Locator:	KINGDOME REGULATOR					Locator:	'063053								
Descrip:	W MICHIGAN REG/CSO					Descrip:	KINGDOME REGULATOR					Descrip:	BRANDON ST OUTFALL								
Sample:	L49199-3					Sample:	L49199-5					Sample:	L49487-1								
Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LG STORM WTR								
ColDate:	10/13/09 22:11					ColDate:	10/16/09 20:43					ColDate:	10/26/09 9:36								
TimeSpan:	1					TimeSpan:	1					TimeSpan:	2								
TotalSolid:						TotalSolid:						TotalSolid:									
ClientLoc:						ClientLoc:						ClientLoc:									
SampDepth:						SampDepth:						SampDepth:									
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**						
Dibenzo(a,h)anthracene		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L						
Dibenzofuran		<MDL	0.024	0.0472	ug/L		<MDL	0.0094	0.0189	ug/L		<MDL	0.024	0.0472	ug/L						
Diethyl Phthalate	1.38		0.024	0.472	ug/L	0.325		0.024	0.0472	ug/L	0.601		0.024	0.472	ug/L						
Dimethyl Phthalate		<MDL	0.024	0.0472	ug/L	4.54		0.024	0.0472	ug/L	0.35		0.024	0.0472	ug/L						
Fluoranthene	0.303		0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L	0.05		0.0094	0.0189	ug/L						
Fluorene		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L						
Hexachlorobenzene		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Hexachlorobutadiene		<MDL	0.047	0.0943	ug/L							<MDL	0.047	0.0943	ug/L						
Hexachlorocyclopentadiene		<MDL	0.24	0.472	ug/L							<MDL	0.24	0.472	ug/L						
Hexachloroethane		<MDL	0.047	0.0943	ug/L							<MDL	0.047	0.0943	ug/L						
Indeno(1,2,3-Cd)Pyrene	0.164		0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L		<MDL	0.0094	0.0189	ug/L						
Isophorone		<MDL	0.047	0.0943	ug/L							<MDL	0.047	0.0943	ug/L						
N-Nitrosodi-N-Propylamine		<MDL	0.047	0.0943	ug/L							<MDL	0.047	0.0943	ug/L						
N-Nitrosodimethylamine		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
N-Nitrosodiphenylamine		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Naphthalene	0.13		0.0094	0.0189	ug/L	0.397		0.0094	0.0189	ug/L	0.0292		0.0094	0.0189	ug/L						
Nitrobenzene		<MDL	0.024	0.0472	ug/L							<MDL	0.024	0.0472	ug/L						
Pentachlorophenol		<MDL	0.24	0.472	ug/L		<MDL	0.094	0.189	ug/L		<MDL	0.24	0.472	ug/L						
Phenanthrene	0.412		0.0094	0.0236	ug/L	0.231		0.0094	0.0189	ug/L	0.0927		0.0094	0.0236	ug/L						
Phenol	5.79		0.024	0.0472	ug/L	6.25		0.047	0.0943	ug/L	0.974		0.024	0.0472	ug/L						
Pyrene	0.624		0.0094	0.0189	ug/L	0.171		0.0094	0.0189	ug/L	0.103		0.0094	0.0189	ug/L						
Pyridine		<MDL	0.047	0.0943	ug/L							<MDL	0.047	0.0943	ug/L						
Bis(2-ethylhexyl)adipate							<MDL	0.047	0.0943	ug/L											
Bisphenol A							<MDL	0.12	0.236	ug/L											
Total 4-Nonylphenol							<MDL	0.047	0.0943	ug/L											

Login: P49496

WLRD-MERCER ISLAND WQ
STORM MONITORING

Personnel: J. Power

Project: 421195-180

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
J Power	5-NOV-09	1525
RECEIVED BY	Date	Time
[illegible]	11-5-09	1525
Sample Number(s) L49496 1-6		(All)

SAMPLENUM	P49496-1	P49496-2		P49496-3
QC LINK				
LOCATOR	MERCERISL06	MERCERISL10		MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10		T_KC_MERCERSTRM-3
Locator Desc	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH		FOREST AVE. AND 84TH AVE SE
SITE	KING COUNTY	KING COUNTY		KING COUNTY
COMMENTS	Need DOT Key	North Island		84th Ave-Weyburn-West Island
Start Date/Time	5-NOV-09 1413	1432 1434		1246
End Date/Time				
Time Span				
Sample Depth				~~96.0~~
COND, FIELD	86.0	52.0	52.6	240.6
DO SAT, FIELD	97.0	95.4	95.4	96.0
DO, FIELD	10.55	9.96	9.97	10.61
PERSONNEL	JP	JP		JP
PH, FIELD	7.44	7.14	7.13	7.67
SAMP TEMP	11.33	12.82	12.82	10.44
STRM FLOW	2.36 CFS	2.81 CFS		0.86 SWOFFER
TURB, FIELD	26.6	11.1 / 9.82		312
SAMP INFO	**********	**********		**********
Dept. Matrix Prod	3 LG TSS 5 LG FC-MF POND LEVEL HIGH-MUDDY	3 LG TSS 5 LG FC-MF 6 LG CA-ICPMS 6 LG CR-ICPMS, DISS 6 LG CU-ICPMS, DISS 6 LG ICPMS-HARDNESS 6 LG MG-ICPMS 6 LG PB-ICPMS, DISS 6 LG ZN-ICPMS, DISS A LITTLE HIGH BUT NOT VERY TURBID		3 LG TSS 5 LG FC-MF UP + MUDDY

Login: P49496

WLRD-MERCER ISLAND WQ
STORM MONITORING

Personnel: JP

Project: 421195-180

SAMPLENUM	P49496-4	P49496-5	P49496-6
QC LINK			FFB
LOCATOR	MERCERISL32	MERCERISL42	FFBLANK
Short Loc. Desc.	T_KC_MERCERSTRM-4	T_KC_MERCERSTRM-5	FFBLAN K
Locator Desc	CREEK NEAR HOLLYHILL DRIVE AND W. MERCER	E. MERCER WAY	FIELD FILTER BLANK
SITE	KING COUNTY	KING COUNTY	METRO
COMMENTS	Holly Hill Dr-West Island	Retention Stucture-East Island	Field filter blank Metals
Start Date/Time	5-NOV-09 / 1310	/ 1334	1255
End Date/Time			
Time Span			
Sample Depth			
COND, FIELD	64.3	153.2	**********
DO SAT, FIELD	97.3	93.3	**********
DO, FIELD	10.42	10.33	**********
PERSONNEL	JP	JP	**********
PH, FIELD	7.22	7.51	**********
SAMP TEMP	11.72	10.22	**********
STRM FLOW	2.59 CFS	1.53 CFS	**********
TURB, FIELD	28.8	171	**********
SAMP INFO	**********	**********	
Dept. Matrix Prod	UP + MUDDY 3 LG TSS 5 LG FC-MF 6 LG CA-ICPMS 6 LG CR-ICPMS, DISS 6 LG CU-ICPMS, DISS 6 LG ICPMS-HARDNESS 6 LG MG-ICPMS 6 LG PB-ICPMS, DISS 6 LG ZN-ICPMS, DISS	UP + MUDDY 3 LG TSS 5 LG FC-MF	6 LM CR-ICPMS, DISS 6 LM CU-ICPMS, DISS 6 LM PB-ICPMS, DISS 6 LM ZN-ICPMS, DISS

WG106019 (TSS - 421195) Department: 3 - Conventionals Move Date: 2009-11-17 11:41:39

Sample	Project	Project Des	List Type	Matrix	Collect Dat	Prep Date	Anal Date	QC Associa
L49446-1	421195-15	Beaver Lak	CVTSS	FRESH W	########	########	########	WG106019
L49446-2	421195-15	Beaver Lak	CVTSS	FRESH W	########	########	########	WG106019
L49447-1	421195-11	Cottage La	CVTSS	FRESH W	########	########	########	WG106019
L49447-2	421195-11	Cottage La	CVTSS	FRESH W	########	########	########	WG106019
L49447-3	421195-11	Cottage La	CVTSS	FRESH W	########	########	########	WG106019
L49447-4	421195-11	Cottage La	CVTSS	FRESH W	########	########	########	WG106019
L49447-5	421195-11	Cottage La	CVTSS	FRESH W	########	########	########	WG106019
L49447-7	421195-11	Cottage La	CVTSS	FRESH W	########	########	########	WG106019
L49447-8	421195-11	Cottage La	CVTSS	FRESH W	########	########	########	WG106019
L49447-9	421195-11	Cottage La	CVTSS	FRESH W	########	########	########	WG106019
L49447-10	421195-11	Cottage La	CVTSS	FRESH W	########	########	########	WG106019
L49447-11	421195-11	Cottage La	CVTSS	FRESH W	########	########	########	WG106019
L49447-12	421195-11	Cottage La	CVTSS	FRESH W	########	########	########	WG106019
L49447-13	421195-11	Cottage La	CVTSS	FRESH W	########	########	########	WG106019
L49496-1	421195-18	Mercer Isla	CVTSS	STORM W	########	########	########	WG106019
L49496-2	421195-18	Mercer Isla	CVTSS	STORM W	########	########	########	WG106019
L49496-3	421195-18	Mercer Isla	CVTSS	STORM W	########	########	########	WG106019
L49496-4	421195-18	Mercer Isla	CVTSS	STORM W	########	########	########	WG106019
L49496-5	421195-18	Mercer Isla	CVTSS	STORM W	########	########	########	WG106019
L49513-1	421195-19	Vashon Isl	CVTSS	FRESH W	########	########	########	WG106019
L49513-2	421195-19	Vashon Isl	CVTSS	FRESH W	########	########	########	WG106019
L49513-3	421195-19	Vashon Isl	CVTSS	FRESH W	########	########	########	WG106019
L49513-4	421195-19	Vashon Isl	CVTSS	FRESH W	########	########	########	WG106019
L49513-5	421195-19	Vashon Isl	CVTSS	FRESH W	########	########	########	WG106019
WG10601	MB		CVTSS	BLANK WTR		########	########	WG10601
WG10601	LCS		CVTSS	BLANK WTR		########	########	WG10601
WG10601	LD		CVTSS	FRESH WTR		########	########	WG10601
WG10601	LD		CVTSS	STORM WTR		########	########	WG10601
WG10601	MB		CVTSS	BLANK WTR		########	########	WG10601
WG10601	LCS		CVTSS	BLANK WTR		########	########	WG10601
WG10601	LD		CVTSS	FRESH WTR		########	########	WG10601

WG106044 (Mercer Island Storm-Nov.) Department: 2 - Environmental Services Move Date: 2009-1

Sample	Project	Project Des	List Type	Matrix	Collect Dat	Prep Date	Anal Date	QC Associa
L49496-1	421195-18	Mercer Isla	ESS	STORM W	########			WG106044
L49496-1	421195-18	Mercer Isla	ESS-FIELD	STORM W	########			WG106044
L49496-2	421195-18	Mercer Isla	ESS	STORM W	########			WG106044
L49496-2	421195-18	Mercer Isla	ESS-FIELD	STORM W	########			WG106044
L49496-3	421195-18	Mercer Isla	ESS	STORM W	########			WG106044
L49496-3	421195-18	Mercer Isla	ESS-FIELD	STORM W	########			WG106044
L49496-4	421195-18	Mercer Isla	ESS	STORM W	########			WG106044
L49496-4	421195-18	Mercer Isla	ESS-FIELD	STORM W	########			WG106044
L49496-5	421195-18	Mercer Isla	ESS	STORM W	########			WG106044
L49496-5	421195-18	Mercer Isla	ESS-FIELD	STORM W	########			WG106044
L49496-6	421195-18	Mercer Isla	ESS	BLANK WT	########			WG106044

WG10604	CS	ESS-FIELD	BLANK WTR	WG106044
WG106044	CS	ESS-FIELD	BLANK WTR	WG106044
WG106044	CS	ESS-FIELD	BLANK WTR	WG106044
WG106044	FREP	ESS-FIELD	STORM WTR	WG106044

WG105946 () Department: 5 - Microbiology Move Date: 2009-11-06 14:28:16

Sample	Project	Project Des	List Type	Matrix	Collect Dat	Prep Date	Anal Date	QC Associa
L49496-1	421195-18	Mercer Isla	MCFC-MF	STORM W	########	########	########	WG105928
L49496-2	421195-18	Mercer Isla	MCFC-MF	STORM W	########	########	########	WG105928
L49496-3	421195-18	Mercer Isla	MCFC-MF	STORM W	########	########	########	WG105928
L49496-4	421195-18	Mercer Isla	MCFC-MF	STORM W	########	########	########	WG105928
L49496-5	421195-18	Mercer Isla	MCFC-MF	STORM W	########	########	########	WG105928
WG105928	PC	Mercer Isla	MCFC-MF	BLANK WTR		########	########	WG105928
WG105928	NC	Mercer Isla	MCFC-MF	BLANK WTR		########	########	WG105928
WG105928	BF	Mercer Isla	MCFC-MF	BLANK WTR		########	########	WG105928
WG105928	AF	Mercer Isla	MCFC-MF	BLANK WTR		########	########	WG105928

WG106212 (11/18/09 Misc Totals 1) Department: 6 - Metals Move Date: 2009-11-24 13:33:56

Sample	Project	Project Des	List Type	Matrix	Collect Dat	Prep Date	Anal Date	QC Associa
L49275-1	421195-26	Ravensdal	MTICPMS	GRND WT	########	########	########	WG106212
L49399-1	421430-30	OCS-Lake	MTICPMS	EFFLUENT	########	########	########	WG106212
L49451-1	423575-52	Brightwate	MTHARD-I	CNSTRDE	########	########	########	WG106212
L49451-1	423575-52	Brightwate	MTICPMS	CNSTRDE	########	########	########	WG106212
L49467-1	421196-20	Roads BMI	MTHARD-I	STORM W	########	########	########	WG106212
L49467-1	421196-20	Roads BMI	MTICPMS	STORM W	########	########	########	WG106212
L49467-2	421196-20	Roads BMI	MTHARD-I	STORM W	########	########	########	WG106212
L49467-2	421196-20	Roads BMI	MTICPMS	STORM W	########	########	########	WG106212
L49467-3	421196-20	Roads BMI	MTHARD-I	STORM W	########	########	########	WG106212
L49467-3	421196-20	Roads BMI	MTICPMS	STORM W	########	########	########	WG106212
L49467-4	421196-20	Roads BMI	MTHARD-I	STORM W	########	########	########	WG106212
L49467-4	421196-20	Roads BMI	MTICPMS	STORM W	########	########	########	WG106212
L49496-2	421195-18	Mercer Isla	MTHARD-I	STORM W	########	########	########	WG106212
L49496-2	421195-18	Mercer Isla	MTICPMS	STORM W	########	########	########	WG106212
L49496-4	421195-18	Mercer Isla	MTHARD-I	STORM W	########	########	########	WG106212
L49496-4	421195-18	Mercer Isla	MTICPMS	STORM W	########	########	########	WG106212
L49497-2	421879-22	NPDES SV	MTHARD-I	STORM W	########	########	########	WG106212
L49497-2	421879-22	NPDES SV	MTICPMS	STORM W	########	########	########	WG106212
L49497-3	421879-22	NPDES SV	MTHARD-I	STORM W	########	########	########	WG106212
L49497-3	421879-22	NPDES SV	MTICPMS	STORM W	########	########	########	WG106212
L49527-2	421422-CH	SWD-CHS	MTICPMS	FRESH W	########	########	########	WG106212
L49527-3	421422-CH	SWD-CHS	MTICPMS	FRESH W	########	########	########	WG106212
L49527-4	421422-CH	SWD-CHS	MTICPMS	FRESH W	########	########	########	WG106212
L49544-1	421422-CH	SWD-CHS	MTHARD-I	FRESH W	########	########	########	WG106212
L49544-1	421422-CH	SWD-CHS	MTICPMS	FRESH W	########	########	########	WG106212
L49544-2	421422-CH	SWD-CHS	MTHARD-I	FRESH W	########	########	########	WG106212
L49544-2	421422-CH	SWD-CHS	MTICPMS	FRESH W	########	########	########	WG106212
L49581-1	421196-20	Roads BMI	MTHARD-I	STORM W	########	########	########	WG106212
L49581-1	421196-20	Roads BMI	MTICPMS	STORM W	########	########	########	WG106212

L49581-2	421196-20	Roads BMI	MTHARD-I	STORM W	########	########	########	WG106212
L49581-2	421196-20	Roads BMI	MTICPMS	STORM W	########	########	########	WG106212
L49581-3	421196-20	Roads BMI	MTHARD-I	STORM W	########	########	########	WG106212
L49581-3	421196-20	Roads BMI	MTICPMS	STORM W	########	########	########	WG106212
L49581-4	421196-20	Roads BMI	MTHARD-I	STORM W	########	########	########	WG106212
L49581-4	421196-20	Roads BMI	MTICPMS	STORM W	########	########	########	WG106212
WG106212	MB		MTHARD-I	BLANK WTR		########	########	WG106212
WG106212	MB		MTICPMS	BLANK WTR		########	########	WG106212
WG106212	SB		MTHARD-I	BLANK WTR		########	########	WG106212
WG106212	SB		MTICPMS	BLANK WTR		########	########	WG106212
WG106212	LD		MTHARD-I	CNSTRDEWTR		########	########	WG106212
WG106212	LD		MTICPMS	CNSTRDEWTR		########	########	WG106212
WG106212	MS		MTHARD-I	CNSTRDEWTR		########	########	WG106212
WG106212	MS		MTICPMS	CNSTRDEWTR		########	########	WG106212
WG106212	LD		MTHARD-I	FRESH WTR		########	########	WG106212
WG106212	LD		MTICPMS	FRESH WTR		########	########	WG106212
WG106212	MS		MTHARD-I	FRESH WTR		########	########	WG106212
WG106212	MS		MTICPMS	FRESH WTR		########	########	WG106212

WG106340 (11/23/09 SWD, Roads, Merc) Department: 6 - Metals Move Date: 2009-12-01 08:43:17

Sample	Project	Project Des	List Type	Matrix	Collect Dat	Prep Date	Anal Date	QC Associa
L49496-2	421195-18	Mercer Isla	MTICPMS-	STORM W	########	########	########	WG106340
L49496-4	421195-18	Mercer Isla	MTICPMS-	STORM W	########	########	########	WG106340
L49496-6	421195-18	Mercer Isla	MTICPMS-	FILTER W	########	########	########	WG106340
L49548-1	421422-VA	SWD-VALS	MTICPMS-	LEACHATE	########	########	########	WG106340
L49550-4	421422-VA	SWD-VAG	MTICPMS-	GRND WT	########	########	########	WG106340
L49551-1	421422-CF	SWD-CFG	MTICPMS-	GRND WT	########	########	########	WG106340
L49551-3	421422-CF	SWD-CFG	MTICPMS-	GRND WT	########	########	########	WG106340
L49551-4	421422-CF	SWD-CFG	MTICPMS-	GRND WT	########	########	########	WG106340
L49553-1	421422-CF	SWD-CFG	MTICPMS-	GRND WT	########	########	########	WG106340
L49581-1	421196-20	Roads BMI	MTICPMS-	STORM W	########	########	########	WG106340
L49581-2	421196-20	Roads BMI	MTICPMS-	STORM W	########	########	########	WG106340
L49581-3	421196-20	Roads BMI	MTICPMS-	STORM W	########	########	########	WG106340
L49581-4	421196-20	Roads BMI	MTICPMS-	STORM W	########	########	########	WG106340
L49581-10	421196-20	Roads BMI	MTICPMS-	FILTER W	########	########	########	WG106340
L49591-1	421196-20	Roads BMI	MTICPMS-	BLANK WT	########	########	########	WG106340
L49610-1	421422-CF	SWD-CFG	MTICPMS-	GRND WT	########	########	########	WG106340
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L49610-4	421422-CF	SWD-CFG	MTICPMS-	GRND WT	########	########	########	WG106340
L49610-5	421422-CF	SWD-CFG	MTICPMS-	GRND WT	########	########	########	WG106340
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WG106340	SB		MTICPMS-	BLANK WTR		########	########	WG106340
WG106340	LD		MTICPMS-	LEACHATE		########	########	WG106340
WG106340	MS		MTICPMS-	LEACHATE		########	########	WG106340
WG106340	LD		MTICPMS-	GRND WTR		########	########	WG106340
WG106340	MS		MTICPMS-	GRND WTR		########	########	WG106340

* End of BATCH_L49496_24403B.xls

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L49496-2 RANGE1

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METHOD BLANK
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L49548-1 MS-20 MATRIX SPIKE
L49610-3 RPD-LIQ LAB DUPLICATE
L49610-3 MS-20 MATRIX SPIKE

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Mon, L49496

Workgroup: WG106019 TSS

MB:WG106019-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG106019-2 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	90	90		80--120

LD:WG106019-3 L49446-2 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-150
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	0.5	1	mg/L	0.8	0.7			25

LD:WG106019-4 L49496-1 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	50.4	50.4	0		25

MB:WG106019-5 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG106019-6 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	95	95		80--120

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Mon, L49496

LD:WG106019-7 L49513-2 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-190
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	1.9	mg/L	2.69	2.31	15		25

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Mon, L49496

Workgroup: WG106044 Field Parameters

CS:WG106044-1 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	73.5	99		90--110
pH, Field			pH	6.86	6.87	0.01		0--.2

CS:WG106044-2 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	73.7	100		90--110
pH, Field			pH	6.86	6.87	0.01		0--.2

CS:WG106044-3 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	73.7	100		90--110
Dissolved Oxygen Saturation, Field			%	100	101.3	101		96--104
pH, Field			pH	6.86	6.86	0		0--.2

FREP:WG106044-4 L49496-2 Matrix: STORM WTR Listtype: ESS-FIELDMETER Method: NONE Project: 421195-180
(Field Replicate)

Parameter	MDL	RDL	Units	Samp Value	REP Value	RPD^	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	52	52.6	1		10
Dissolved Oxygen, Field	0.5	1	mg/L	10	10	0		20
Sample Temperature, Field			deg C	12.8	12.8	0		0.3
pH, Field			pH	7.14	7.13	0.01		0.2

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Mon, L49496

Workgroup: WG105946 Fecal coliform

PC:WG105928-2 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG105928-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG105928-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG105928-5 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Mon, L49496

Workgroup: WG106212 Total Metals & Hardness by ICPMS

MB:WG106212-1 Matrix: BLANK WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Hardness, Calc	0.066	0.331	mg CaCO3/L	<MDL	

MB:WG106212-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aluminum, Total, ICP-MS	2	10	ug/L	<MDL	
Antimony, Total, ICP-MS	0.3	1	ug/L	<MDL	
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Barium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Calcium, Total, ICP-MS	10	50	ug/L	<MDL	
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	
Cobalt, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	
Iron, Total, ICP-MS	10	50	ug/L	<MDL	
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Magnesium, Total, ICP-MS	10	50	ug/L	<MDL	
Manganese, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Potassium, Total, ICP-MS	100	500	ug/L	<MDL	
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Sodium, Total, ICP-MS	20	100	ug/L	<MDL	
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	
Tin, Total, ICP-MS	0.3	1.5	ug/L	<MDL	
Vanadium, Total, ICP-MS	0.075	0.375	ug/L	<MDL	
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	

SB:WG106212-2 MB:WG106212-1 Matrix: BLANK WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	<MDL	33.1	33.5	101		85--115

SB:WG106212-2 MB:WG106212-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP-MS	2	10	ug/L	<MDL	20	20.5	102		85--115
Antimony, Total, ICP-MS	0.3	1	ug/L	<MDL	20	19.2	96		85--115
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	20	100		85--115
Barium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.7	99		85--115
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	21.6	108		85--115
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.4	102		85--115
Calcium, Total, ICP-MS	10	50	ug/L	<MDL	5000	4750	95		85--115
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	19.9	100		85--115
Cobalt, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.6	103		85--115
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	20	20.5	102		85--115
Iron, Total, ICP-MS	10	50	ug/L	<MDL	5000	4890	98		85--115
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.7	103		85--115
Magnesium, Total, ICP-MS	10	50	ug/L	<MDL	5000	5260	105		85--115
Manganese, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.4	102		85--115
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.3	102		85--115
Potassium, Total, ICP-MS	100	500	ug/L	<MDL	5000	4860	97		85--115
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	21.1	105		85--115
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.8	99		85--115
Sodium, Total, ICP-MS	20	100	ug/L	<MDL	5000	4810	96		85--115
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	20	20.1	100		85--115
Tin, Total, ICP-MS	0.3	1.5	ug/L	<MDL	20	20.2	101		85--115
Vanadium, Total, ICP-MS	0.075	0.375	ug/L	<MDL	20	20.4	102		85--115
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.7	104		85--115

LD:WG106212-3 L49451-1 Matrix: CNSTRDEWTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 423575-521-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	72.1	73.3	2		20

LD:WG106212-3 L49451-1 Matrix: CNSTRDEWTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 423575-521-4
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Antimony, Total, ICP-MS	0.3	1	ug/L	<MDL	<MDL			20
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	14.7	14.8	1		20
Barium, Total, ICP-MS	0.05	0.25	ug/L	14.8	15.1	2		20
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Calcium, Total, ICP-MS	10	50	ug/L	16100	16400	1		20
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	<MDL			20
Copper, Total, ICP-MS	0.4	2	ug/L	0.44	0.41			20
Iron, Total, ICP-MS	10	50	ug/L	112	112	0		20
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Magnesium, Total, ICP-MS	10	50	ug/L	7720	7890	2		20
Manganese, Total, ICP-MS	0.1	0.5	ug/L	27.4	27.3	1		20
Nickel, Total, ICP-MS	0.1	0.5	ug/L	1.75	1.83	4		20
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Sodium, Total, ICP-MS	20	100	ug/L	45900	46700	2		20
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	<MDL			20
Zinc, Total, ICP-MS	0.5	2.5	ug/L	1.7	1.7			20

MS:WG106212-4 L49451-1 Matrix: CNSTRDEWTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 423575-521-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	72.1	33.1	107	105		75--125

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Mon, L49496

MS:WG106212-4 L49451-1 Matrix: CNSTRDEWTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 423575-521-4
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Antimony, Total, ICP-MS	0.3	1	ug/L	<MDL	20	19.7	99		75--125
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	14.7	20	35.4	103		75--125
Barium, Total, ICP-MS	0.05	0.25	ug/L	14.8	20	35.2	102		75--125
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	22.3	112		75--125
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.3	101		75--125
Calcium, Total, ICP-MS	10	50	ug/L	16100	5000	20800	94		75--125
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	20	100		75--125
Copper, Total, ICP-MS	0.4	2	ug/L	0.44	20	21.9	107		75--125
Iron, Total, ICP-MS	10	50	ug/L	112	5000	4870	95		75--125
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.8	104		75--125
Magnesium, Total, ICP-MS	10	50	ug/L	7720	5000	13300	112		75--125
Manganese, Total, ICP-MS	0.1	0.5	ug/L	27.4	20	46.7	96		75--125
Nickel, Total, ICP-MS	0.1	0.5	ug/L	1.75	20	23.2	107		75--125
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.4	102		75--125
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.3	96		75--125
Sodium, Total, ICP-MS	20	100	ug/L	45900	5000	50600			(No MS/MSD %Rec. due to 4x rule)
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	20	19.9	100		75--125
Zinc, Total, ICP-MS	0.5	2.5	ug/L	1.7	20	22.3	103		75--125

LD:WG106212-5 L49544-1 Matrix: FRESH WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 421422-CHSW-Q
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	34.8	34.9	0		20

LD:WG106212-5 L49544-1 Matrix: FRESH WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 421422-CHSW-Q
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Aluminum, Total, ICP-MS	2	10	ug/L	310	309	1		20
Antimony, Total, ICP-MS	0.3	1	ug/L	<MDL	<MDL			20
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	2.06	2.06	0		20
Barium, Total, ICP-MS	0.05	0.25	ug/L	8.71	8.72	0		20
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Calcium, Total, ICP-MS	10	50	ug/L	9120	9160	0		20
Chromium, Total, ICP-MS	0.2	1	ug/L	0.86	0.83			20
Cobalt, Total, ICP-MS	0.05	0.25	ug/L	0.12	0.12			20
Copper, Total, ICP-MS	0.4	2	ug/L	22.9	22.8	0		20
Iron, Total, ICP-MS	10	50	ug/L	245	243	1		20
Lead, Total, ICP-MS	0.1	0.5	ug/L	0.23	0.23			20
Magnesium, Total, ICP-MS	10	50	ug/L	2930	2910	1		20
Manganese, Total, ICP-MS	0.1	0.5	ug/L	12.8	12.9	1		20
Nickel, Total, ICP-MS	0.1	0.5	ug/L	0.78	0.741	5		20
Potassium, Total, ICP-MS	100	500	ug/L	1430	1420	0		20
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Sodium, Total, ICP-MS	20	100	ug/L	5290	5270	0		20
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	<MDL			20
Tin, Total, ICP-MS	0.3	1.5	ug/L	<MDL	<MDL			20
Vanadium, Total, ICP-MS	0.075	0.375	ug/L	1.73	1.75	1		20
Zinc, Total, ICP-MS	0.5	2.5	ug/L	8.28	7.98	4		20

MS:WG106212-6 L49544-1 Matrix: FRESH WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 421422-CHSW-Q
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	34.8	33.1	67.5	99		75--125

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MS:WG106212-6 L49544-1 Matrix: FRESH WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 421422-CHSW-Q
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Aluminum, Total, ICP-MS	2	10	ug/L	310	20	322	MS/MSD %Rec. due to 4x rule)		
Antimony, Total, ICP-MS	0.3	1	ug/L	<MDL	20	20.1	101		75--125
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	2.06	20	21.8	99		75--125
Barium, Total, ICP-MS	0.05	0.25	ug/L	8.71	20	29.3	103		75--125
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	21.3	106		75--125
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.5	103		75--125
Calcium, Total, ICP-MS	10	50	ug/L	9120	5000	14000	97		75--125
Chromium, Total, ICP-MS	0.2	1	ug/L	0.86	20	21.2	101		75--125
Cobalt, Total, ICP-MS	0.05	0.25	ug/L	0.12	20	20.5	102		75--125
Copper, Total, ICP-MS	0.4	2	ug/L	22.9	20	43.8	105		75--125
Iron, Total, ICP-MS	10	50	ug/L	245	5000	5250	100		75--125
Lead, Total, ICP-MS	0.1	0.5	ug/L	0.23	20	21.8	108		75--125
Magnesium, Total, ICP-MS	10	50	ug/L	2930	5000	7920	100		75--125
Manganese, Total, ICP-MS	0.1	0.5	ug/L	12.8	20	33.8	105		75--125
Nickel, Total, ICP-MS	0.1	0.5	ug/L	0.78	20	21.9	105		75--125
Potassium, Total, ICP-MS	100	500	ug/L	1430	5000	6290	97		75--125
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	19.1	95		75--125
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.3	101		75--125
Sodium, Total, ICP-MS	20	100	ug/L	5290	5000	10100	96		75--125
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	20	20.6	103		75--125
Tin, Total, ICP-MS	0.3	1.5	ug/L	<MDL	20	19.4	97		75--125
Vanadium, Total, ICP-MS	0.075	0.375	ug/L	1.73	20	22.7	105		75--125
Zinc, Total, ICP-MS	0.5	2.5	ug/L	8.28	20	28.1	99		75--125

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Workgroup: WG106340 Dissolved Metals by ICPMS

MB:WG106340-1 Matrix: BLANK WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Aluminum, Dissolved, ICP-MS	2	10	ug/L	<MDL	
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Potassium, Dissolved, ICP-MS	100	500	ug/L	<MDL	
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Sodium, Dissolved, ICP-MS	20	100	ug/L	<MDL	
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	
Tin, Dissolved, ICP-MS	0.3	1.5	ug/L	<MDL	
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	

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Mercer Island Stormwater Mon, L49496

SB:WG106340-2 MB:WG106340-1 Matrix: BLANK WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Aluminum, Dissolved, ICP-MS	2	10	ug/L	<MDL	20	20.9	104		85--115
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	20	18.6	93		85--115
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.4	102		85--115
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.4	102		85--115
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	21.4	107		85--115
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.8	104		85--115
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	5020	100		85--115
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	20	20.3	101		85--115
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.5	97		85--115
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	20	21.4	107		85--115
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	5150	103		85--115
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.3	97		85--115
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	5290	106		85--115
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.6	98		85--115
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.7	104		85--115
Potassium, Dissolved, ICP-MS	100	500	ug/L	<MDL	5000	5090	102		85--115
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	21.4	107		85--115
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.5	102		85--115
Sodium, Dissolved, ICP-MS	20	100	ug/L	<MDL	5000	5300	106		85--115
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	20	18.9	94		85--115
Tin, Dissolved, ICP-MS	0.3	1.5	ug/L	<MDL	20	18.9	94		85--115
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	20	19.8	99		85--115
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	21.1	106		85--115

LD:WG106340-3 L49548-1 Matrix: LEACHATE Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421422-VALS-M
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Aluminum, Dissolved, ICP-MS	2	10	ug/L	3.5	3.2			20
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	1.39	1.38	0		20
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	1.42	1.41	1		20
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	29.3	29.2	1		20
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	0.057	<MDL			20
Calcium, Dissolved, ICP-MS	100	500	ug/L	95100	97300	2		20
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	0.51	0.51			20
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	2.8	2.81	0		20
Copper, Dissolved, ICP-MS	0.4	2	ug/L	6.39	6.47	1		20
Iron, Dissolved, ICP-MS	10	50	ug/L	11	12			20
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Magnesium, Dissolved, ICP-MS	100	500	ug/L	51200	54000	5		20
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	1.43	1.42	1		20
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	40.4	40.8	1		20
Potassium, Dissolved, ICP-MS	100	500	ug/L	16200	16400	1		20
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Sodium, Dissolved, ICP-MS	200	1000	ug/L	109000	113000	3		20
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	<MDL			20
Tin, Dissolved, ICP-MS	0.3	1.5	ug/L	<MDL	<MDL			20
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	1.15	1.27	10		20
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	25.1	25.1	0		20

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Mercer Island Stormwater Mon, L49496

MS:WG106340-4 L49548-1 Matrix: LEACHATE Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421422-VALS-M
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Aluminum, Dissolved, ICP-MS	2	10	ug/L	3.5	20	23.1	98		75--125
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	1.39	20	20.6	96		75--125
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	1.42	20	22.9	107		75--125
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	29.3	20	54.3	125		75--125
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	21.6	108		75--125
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	0.057	20	20.6	103		75--125
Calcium, Dissolved, ICP-MS	100	500	ug/L	95100	5000	100000	MS/MSD %Rec. due to 4x rule)		
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	0.51	20	20	98		75--125
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	2.8	20	22.3	98		75--125
Copper, Dissolved, ICP-MS	0.4	2	ug/L	6.39	20	27	103		75--125
Iron, Dissolved, ICP-MS	10	50	ug/L	11	5000	4950	99		75--125
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.9	94		75--125
Magnesium, Dissolved, ICP-MS	100	500	ug/L	51200	5000	56900	MS/MSD %Rec. due to 4x rule)		
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	1.43	20	21.5	100		75--125
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	40.4	20	61.1	103		75--125
Potassium, Dissolved, ICP-MS	100	500	ug/L	16200	5000	21100	99		75--125
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	22	110		75--125
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	17.6	88		75--125
Sodium, Dissolved, ICP-MS	200	1000	ug/L	109000	5000	114000	MS/MSD %Rec. due to 4x rule)		
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	20	19.7	99		75--125
Tin, Dissolved, ICP-MS	0.3	1.5	ug/L	<MDL	20	19.5	97		75--125
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	1.15	20	21.2	100		75--125
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	25.1	20	45.5	102		75--125

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Mercer Island Stormwater Mon, L49496

LD:WG106340-5 L49610-3 Matrix: GRND WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421422-CFGW
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	<MDL			20
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	0.19	0.15			20
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	3.05	3	2		20
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	0.06	0.053			20
Calcium, Dissolved, ICP-MS	10	50	ug/L	7280	7270	0		20
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	0.26	0.23			20
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Copper, Dissolved, ICP-MS	0.4	2	ug/L	0.93	0.89			20
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	<MDL			20
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Magnesium, Dissolved, ICP-MS	10	50	ug/L	2340	2340	0		20
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	1.67	1.74	4		20
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	0.41	0.37			20
Potassium, Dissolved, ICP-MS	100	500	ug/L	440	430			20
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Sodium, Dissolved, ICP-MS	20	100	ug/L	2510	2500	1		20
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	<MDL			20
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	0.15	0.12			20
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	3.26	3.28	1		20

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Mercer Island Stormwater Mon, L49496

MS:WG106340-6 L49610-3 Matrix: GRND WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421422-CFGW
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	20	18.8	94		75--125
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	0.19	20	21.2	105		75--125
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	3.05	20	23.3	101		75--125
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	21.7	108		75--125
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	0.06	20	20.6	103		75--125
Calcium, Dissolved, ICP-MS	10	50	ug/L	7280	5000	12100	96		75--125
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	0.26	20	20.1	99		75--125
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	18.9	95		75--125
Copper, Dissolved, ICP-MS	0.4	2	ug/L	0.93	20	21.8	104		75--125
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	5060	101		75--125
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.9	94		75--125
Magnesium, Dissolved, ICP-MS	10	50	ug/L	2340	5000	7440	102		75--125
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	1.67	20	20.6	95		75--125
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	0.41	20	20.8	102		75--125
Potassium, Dissolved, ICP-MS	100	500	ug/L	440	5000	5430	100		75--125
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	23	115		75--125
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.2	101		75--125
Sodium, Dissolved, ICP-MS	20	100	ug/L	2510	5000	7720	104		75--125
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	20	18.8	94		75--125
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	0.15	20	19.6	97		75--125
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	3.26	20	24	104		75--125

King County

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February 1, 2010

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180
Mercer Island Stormwater Monitoring,
Stormwater Samples, L49810-1 to 6

Attached is the comprehensive report for the stormwater samples collected and delivered to the laboratory on January 4, 2010. The samples were analyzed in the Trace Metals, Microbiology and Conventionals units of the laboratory. A comprehensive report #13974 was send via email on February 1, 2010. QA/QC data summaries are included for your information.

Conventionals:
There were no anomalies associated with the preparation and the analysis of these samples.

Metals:
There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:
There were no anomalies associated with the preparation and the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

1202M

King County Environmental Lab Analytical Report

	Project:	421195-180					Project:	421195-180					Project:	421195-180									
	Locator:	MERCERISL06					Locator:	MERCERISL10					Locator:	MERCERISL26									
	Descrip:	R/D FACILITY SOUTH					Descrip:	SE 22ND ST, NEAR M					Descrip:	FOREST AVE. AND 84									
	Sample:	L49810-1					Sample:	L49810-2					Sample:	L49810-3									
	Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LG STORM WTR									
	ColDate:	1/4/10 11:10					ColDate:	1/4/10 11:28					ColDate:	1/4/10 9:30									
	TimeSpan:						TimeSpan:						TimeSpan:										
	TotalSolid:						TotalSolid:						TotalSolid:										
	ClientLoc:						ClientLoc:						ClientLoc:										
	SampDepth:						SampDepth:						SampDepth:										
	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						
CV SM2540-D																							
Total Suspended Solids	166		1.7	3.3	mg/L		28.8		2	4	mg/L		147		2	4	mg/L						
ES NONE																							
Conductivity, Field	82.5		0.5	10	umhos/cm		88.9		0.5	10	umhos/cm		78.6		0.5	10	umhos/cm						
Discharge Rate of Stream	2.8		0.05	0.1	cfs		4.2		0.05	0.1	cfs		1.9		0.05	0.1	cfs						
Dissolved Oxygen Saturation, Field	97.3				%		102.3				%		97.5				%						
Dissolved Oxygen, Field	11.7		0.5	1	mg/L		12.2		0.5	1	mg/L		11.8		0.5	1	mg/L						
Field Personnel	JP				none		JP				none		JP				none						
Sample Temperature, Field	7.2				deg C		8.1				deg C		6.9				deg C						
Turbidity, Field	63.3		0.5	2	NTU		46.8		0.5	2	NTU		93.2		0.5	2	NTU						
pH, Field	7.45				pH		7.08				pH		7.26				pH						
MC SM 9222D 20TH																							
Fecal Coliform	390				CFU/100ml		3300				CFU/100ml		1500				CFU/100ml						
MT EPA 200.8*SW846 6020A																							
Calcium, Total, ICP-MS							7660		10	50	ug/L												
Chromium, Dissolved, ICP-MS							0.72	<RDL	0.2	1	ug/L												
Copper, Dissolved, ICP-MS							77.9		0.4	2	ug/L												
Lead, Dissolved, ICP-MS							0.3	<RDL	0.1	0.5	ug/L												
Magnesium, Total, ICP-MS							3330		10	50	ug/L												
Zinc, Dissolved, ICP-MS							24.6		0.5	2.5	ug/L												
MT EPA 200.8/SW846 6020A*SM2340B																							
Hardness, Calc							32.8		0.066	0.331	mg CaCO3/L												
ES NONE																							
Sample Function																							

King County Environmental Lab Analytical Report

Project:	421195-180					Project:	421195-180					Project:	421195-180			
Locator:	MERCERISL32					Locator:	MERCERISL42					Locator:	FFBLANK			
Descrip:	CREEK NEAR HOLLYHI					Descrip:	E. MERCER WAY					Descrip:	FIELD FILTER BLANK			
Sample:	L49810-4					Sample:	L49810-5					Sample:	L49810-6			
Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LM FILTER WTR			
ColDate:	1/4/10 10:00					ColDate:	1/4/10 10:30					ColDate:	1/4/10 9:35			
TimeSpan:						TimeSpan:						TimeSpan:				
TotalSolid:						TotalSolid:						TotalSolid:				
ClientLoc:						ClientLoc:						ClientLoc:				
SampDepth:						SampDepth:						SampDepth:				
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**
CV SM2540-D															
Total Suspended Solids	58.3		1.7	3.3	mg/L	197		3.3	6.7	mg/L					
ES NONE															
Conductivity, Field	69.3		0.5	10	umhos/cm	83.7		0.5	10	umhos/cm					
Discharge Rate of Stream	4.8		0.05	0.1	cfs	2.9		0.05	0.1	cfs					
Dissolved Oxygen Saturation, Field	98.1				%	95.9				%					
Dissolved Oxygen, Field	11.9		0.5	1	mg/L	11.7		0.5	1	mg/L					
Field Personnel	JP				none	JP				none					
Sample Temperature, Field	7				deg C	6.9				deg C					
Turbidity, Field	43		0.5	2	NTU	132		0.5	2	NTU					
pH, Field	7.31				pH	7.31				pH					
MC SM 9222D 20TH															
Fecal Coliform	1000				CFU/100ml	490				CFU/100ml					
MT EPA 200.8*SW846 6020A															
Calcium, Total, ICP-MS	6220		10	50	ug/L										
Chromium, Dissolved, ICP-MS	3:97		0.2	1	ug/L							<MDL	0.2	1	ug/L
Copper, Dissolved, ICP-MS	4.78		0.4	2	ug/L							<MDL	0.4	2	ug/L
Lead, Dissolved, ICP-MS		<MDL	0.1	0.5	ug/L							<MDL	0.1	0.5	ug/L
Magnesium, Total, ICP-MS	2850		10	50	ug/L										
Zinc, Dissolved, ICP-MS	12.9		0.5	2.5	ug/L							<MDL	0.5	2.5	ug/L
MT EPA 200.8/SW846 6020A*SM2340B															
Hardness, Calc	27.2		0.066	0.331	mg CaCO3/L										
ES NONE															
Sample Function											FFBLK				none

Login: P49810

Project: 421195-180

WLRD-MERCER ISLAND WQ
STORM MONITORING

Personnel: J. Power

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
Jean Power	4-JAN-10	1230
RECEIVED BY	Date	Time
[illegible]	1/4/10	1230
Sample Number(s)		(All)
L49810 1-6		

SAMPLENUM	P49810-1	P49810-2		P49810-3
QC LINK				
LOCATOR	MERCERISL06	MERCERISL10		MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10		T_KC_MERCERSTRM-3
Locator Desc	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH		FOREST AVE. AND 84TH AVE SE
SITE	KING COUNTY	KING COUNTY		KING COUNTY
COMMENTS	Need DOT Key	North Island		84th Ave-Weyburn-West Island
Start Date/Time	4-JAN-10/ 1110	1120/ 1136		1030
End Date/Time	UP + VERY MUDDY	UP + MUDDY		UP + MUDDY
Time Span				
Sample Depth				
COND, FIELD	82.5	88.9	91.7	78.6
DO SAT, FIELD	97.3	102.3	100.1	97.5
DO, FIELD	11.73	12.23	12.00	11.83
PERSONNEL	JP	JP	JP	JP
PH, FIELD	7.45	7.08	7.12	7.26
SAMP TEMP	7.16	8.10	8.13	6.93
STRM FLOW	2.8 SWOFFER	4.2	4.0 SWOFFER	1.9 SWOFFER
TURB, FIELD	63.3	46.8	30.4	93.2
SAMP FUNC	**********	**********		**********
Dept. Matrix Prod	3 LG TSS 5 LG FC-MF	3 LG TSS 5 LG FC-MF 6 LG CA-ICPMS 6 LG CR-ICPMS, DISS 6 LG CU-ICPMS, DISS 6 LG ICPMS-HARDNESS 6 LG MG-ICPMS 6 LG PB-ICPMS, DISS 6 LG ZN-ICPMS, DISS		3 LG TSS 5 LG FC-MF

Login: P49810

Project: 421195-180

WLRD-MERCER ISLAND WQ
STORM MONITORING

Personnel:_____

SAMPLENUM	P49810-4	P49810-5	P49810-6
QC LINK			FFB
LOCATOR	MERCERISL32	MERCERISL42	FFBLANK
Short Loc. Desc.	T_KC_MERCERSTRM-4	T_KC_MERCERSTRM-5	FFBLAN K
Locator Desc	CREEK NEAR HOLLYHILL DRIVE AND W. MERCER	E. MERCER WAY	FIELD FILTER BLANK
SITE	KING COUNTY	KING COUNTY	METRO
COMMENTS	Holly Hill Dr-West Island	Retention Stucture-East Island	Field filter blank Metals
Start Date/Time	4-JAN-10 / 1000	1030	0935
End Date/Time	UP + TURBID	UP + TURBID	
Time Span			
Sample Depth			
COND, FIELD	69.3	83.7	**********
DO SAT, FIELD	98.1	95.9	**********
DO, FIELD	11.89	11.65	**********
PERSONNEL	JP	JP	**********
PH, FIELD	7.31	7.31	**********
SAMP TEMP	7.03	~~7.31~~ 6.88	**********
STRM FLOW	4.8 CFS	2.9 CFS	**********
TURB, FIELD	43.0	132	**********
SAMP FUNC	**********	**********	FF BLANK
Dept. Matrix Prod	3 LG TSS 5 LG FC-MF 6 LG CA-ICPMS 6 LG CR-ICPMS, DISS 6 LG CU-ICPMS, DISS 6 LG ICPMS-HARDNESS 6 LG MG-ICPMS 6 LG PB-ICPMS, DISS 6 LG ZN-ICPMS, DISS	3 LG TSS 5 LG FC-MF	6 LM CR-ICPMS, DISS 6 LM CU-ICPMS, DISS 6 LM PB-ICPMS, DISS 6 LM ZN-ICPMS, DISS

King County Environmental Lab Batch Report

Mercer Island Stormwater Monitoring, L49810

WG107012 TSS

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L49883-1	421422-CHGW-NP	SWD-CHGW-NP Cedar Hills Groundwater Non-Potable	CVTSS	GRND WTR	1/4/2010 11:35	1/8/2010 11:00	1/13/2010 10:48		
L49884-1	421422-CHGW-OS	SWD-CHGW-OS Cedar Hills Groundwater Off-Site	CVTSS	GRND WTR	1/5/2010 11:30	1/8/2010 11:00	1/13/2010 10:49		
L49884-3	421422-CHGW-OS		CVTSS	GRND WTR	1/5/2010 10:20	1/8/2010 11:00	1/13/2010 10:49		
L49884-4	421422-CHGW-OS		CVTSS	GRND WTR	1/5/2010 9:25	1/8/2010 11:00	1/13/2010 10:50		
L49884-5	421422-CHGW-OS		CVTSS	GRND WTR	1/5/2010 9:10	1/8/2010 11:00	1/13/2010 10:51		
L49887-1	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	CVTSS	GRND WTR	1/5/2010 7:55	1/8/2010 11:00	1/13/2010 10:52		
L49887-2	421422-CHGW		CVTSS	GRND WTR	1/5/2010 6:15	1/8/2010 11:00	1/13/2010 10:53		
L49887-4	421422-CHGW		CVTSS	GRND WTR	1/5/2010 8:40	1/8/2010 11:00	1/13/2010 10:54		
L49887-5	421422-CHGW		CVTSS	GRND WTR	1/5/2010 8:40	1/8/2010 11:00	1/13/2010 10:54		
L49888-1	421422-CHGW		CVTSS	GRND WTR	1/6/2010 8:20	1/8/2010 11:00	1/13/2010 10:55		
L49888-2	421422-CHGW		CVTSS	GRND WTR	1/6/2010 6:35	1/8/2010 11:00	1/13/2010 10:55		
L49888-4	421422-CHGW		CVTSS	GRND WTR	1/6/2010 9:15	1/8/2010 11:00	1/13/2010 10:56		
L49888-5	421422-CHGW		CVTSS	GRND WTR	1/6/2010 8:20	1/8/2010 11:00	1/13/2010 10:57		
L49889-1	421422-CHGW		CVTSS	GRND WTR	1/6/2010 10:10	1/8/2010 11:00	1/13/2010 10:58		
L49889-2	421422-CHGW		CVTSS	GRND WTR	1/7/2010 6:55	1/8/2010 11:00	1/13/2010 10:59		
L49889-4	421422-CHGW		CVTSS	GRND WTR	1/8/2010 8:25	1/8/2010 11:00	1/13/2010 11:04		
L49889-5	421422-CHGW		CVTSS	GRND WTR	1/7/2010 8:10	1/8/2010 11:00	1/13/2010 10:59		
L49889-6	421422-CHGW		CVTSS	GRND WTR	1/7/2010 8:55	1/8/2010 11:00	1/13/2010 11:00		
L49890-1	421422-CHGW		CVTSS	GRND WTR	1/7/2010 11:00	1/8/2010 11:00	1/13/2010 11:02		
L49898-1	421422-CHGW		CVTSS	GRND WTR	1/8/2010 7:00	1/8/2010 11:00	1/13/2010 11:03		
L49898-2	421422-CHGW		CVTSS	GRND WTR	1/8/2010 5:45	1/8/2010 11:00	1/13/2010 11:04		
L49935-1	421422-CHGW		CVTSS	GRND WTR	1/8/2010 11:10	1/8/2010 11:00	1/13/2010 11:09		
L49935-2	421422-CHGW		CVTSS	GRND WTR	1/8/2010 9:35	1/8/2010 11:00	1/13/2010 11:10		
L49810-1	421195-180	Mercer Island Stormwater Monitoring	CVTSS	STORM WTR	1/4/2010 11:10	1/8/2010 11:00	1/13/2010 10:06		
L49810-2	421195-180		CVTSS	STORM WTR	1/4/2010 11:28	1/8/2010 11:00	1/13/2010 10:06		
L49810-3	421195-180		CVTSS	STORM WTR	1/4/2010 9:30	1/8/2010 11:00	1/13/2010 10:08		
L49810-4	421195-180		CVTSS	STORM WTR	1/4/2010 10:00	1/8/2010 11:00	1/13/2010 10:09		
L49810-5	421195-180		CVTSS	STORM WTR	1/4/2010 10:30	1/8/2010 11:00	1/13/2010 10:10		
L49865-1	421240A	STREAMS MONITOR (surf wtr)	CVTSS	FRESH WTR	1/4/2010 9:06	1/8/2010 11:00	1/13/2010 10:25	WG107012-1, -2, -3, -4, -5, -6, -7, -8, -9, -10, -11, -12	
L49865-2	421240A		CVTSS	FRESH WTR	1/4/2010 9:50	1/8/2010 11:00	1/13/2010 10:26		
L49865-3	421240A		CVTSS	FRESH WTR	1/4/2010 10:07	1/8/2010 11:00	1/13/2010 10:27		
L49865-4	421240A		CVTSS	FRESH WTR	1/4/2010 10:20	1/8/2010 11:00	1/13/2010 10:28		
L49865-5	421240A		CVTSS	FRESH WTR	1/4/2010 10:36	1/8/2010 11:00	1/13/2010 10:29		
L49865-6	421240A		CVTSS	FRESH WTR	1/4/2010 10:46	1/8/2010 11:00	1/13/2010 10:30		
L49865-7	421240A		CVTSS	FRESH WTR	1/4/2010 11:10	1/8/2010 11:00	1/13/2010 10:31		
L49865-8	421240A		CVTSS	FRESH WTR	1/4/2010 11:31	1/8/2010 11:00	1/13/2010 10:32		
L49865-9	421240A		CVTSS	FRESH WTR	1/4/2010 11:52	1/8/2010 11:00	1/13/2010 10:32		
L49865-10	421240A		CVTSS	FRESH WTR	1/4/2010 12:10	1/8/2010 11:00	1/13/2010 10:33		
L49865-11	421240A		CVTSS	FRESH WTR	1/4/2010 12:35	1/8/2010 11:00	1/13/2010 10:34		
L49865-12	421240A		CVTSS	FRESH WTR	1/4/2010 12:50	1/8/2010 11:00	1/13/2010 10:38		

King County Environmental Lab Batch Report

Mercer Island Stormwater Monitoring, L49810

L49868-1	421240A		CVTSS	FRESH WTR	1/4/2010 9:11	1/8/2010 11:00	1/13/2010 10:39		
L49868-2	421240A		CVTSS	FRESH WTR	1/4/2010 9:23	1/8/2010 11:00	1/13/2010 10:39		
L49868-3	421240A		CVTSS	FRESH WTR	1/4/2010 10:15	1/8/2010 11:00	1/13/2010 10:40		
L49868-4	421240A		CVTSS	FRESH WTR	1/4/2010 10:42	1/8/2010 11:00	1/13/2010 10:41		
L49868-5	421240A		CVTSS	FRESH WTR	1/4/2010 10:54	1/8/2010 11:00	1/13/2010 10:42		
L49868-6	421240A		CVTSS	FRESH WTR	1/4/2010 11:21	1/8/2010 11:00	1/13/2010 10:43		
L49868-7	421240A		CVTSS	FRESH WTR	1/4/2010 12:02	1/8/2010 11:00	1/13/2010 10:43		
L49868-8	421240A		CVTSS	FRESH WTR	1/4/2010 12:25	1/8/2010 11:00	1/13/2010 10:44		
L49869-1	421195-190		CVTSS	FRESH WTR	1/5/2010 9:28	1/8/2010 11:00	1/13/2010 10:15		
L49869-2	421195-190		CVTSS	FRESH WTR	1/5/2010 8:40	1/8/2010 11:00	1/13/2010 10:16		
L49869-3	421195-190	Vashon Island Surface Water	CVTSS	FRESH WTR	1/5/2010 8:22	1/8/2010 11:00	1/13/2010 10:17		
L49869-4	421195-190		CVTSS	FRESH WTR	1/5/2010 7:50	1/8/2010 11:00	1/13/2010 10:20		
L49869-5	421195-190		CVTSS	FRESH WTR	1/5/2010 9:07	1/8/2010 11:00	1/13/2010 10:20		
L49910-1	421879		CVTSS	STORM WTR	1/4/2010 5:38	1/8/2010 11:00	1/13/2010 10:11		
L49910-2	421879	NPDES Storm Water Monitoring	CVTSS	STORM WTR	1/4/2010 0:59	1/8/2010 11:00	1/13/2010 10:13		
L49910-3	421879		CVTSS	STORM WTR	1/4/2010 3:51	1/8/2010 11:00	1/13/2010 10:14		
WG107012-1	MB		CVTSS	BLANK WTR		1/8/2010 11:00	1/13/2010 10:03		MB2 100108 11:00
WG107012-2	LCS		CVTSS	BLANK WTR		1/8/2010 11:00	1/13/2010 10:04		LEVEL1
WG107012-3	LD		CVTSS	STORM WTR		1/8/2010 11:00	1/13/2010 10:07		L49810-2
WG107012-4	LD		CVTSS	STORM WTR		1/8/2010 11:00	1/13/2010 10:12		L49910-1
WG107012-5	LD		CVTSS	FRESH WTR		1/8/2010 11:00	1/13/2010 10:18		L49869-3
WG107012-6	MB		CVTSS	BLANK WTR		1/8/2010 11:00	1/13/2010 10:23		MB3 100108 11:00
WG107012-7	LCS		CVTSS	BLANK WTR		1/8/2010 11:00	1/13/2010 10:24		LEVEL1
WG107012-8	LD		CVTSS	FRESH WTR		1/8/2010 11:00	1/13/2010 10:35		L49865-11
WG107012-9	MB		CVTSS	BLANK WTR		1/8/2010 11:00	1/13/2010 10:46		MB4 100108 11:00
WG107012-10	LCS		CVTSS	BLANK WTR		1/8/2010 11:00	1/13/2010 10:47		LEVEL1
WG107012-11	LD		CVTSS	GRND WTR		1/8/2010 11:00	1/13/2010 11:01		L49889-6
WG107012-12	LD		CVTSS	GRND WTR		1/8/2010 11:00	1/13/2010 11:10		L49935-1

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L49810

Workgroup: WG107012 TSS

MB:WG107012-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG107012-2 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	96	96		80--120

LD:WG107012-3 L49810-2 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	2	4	mg/L	28.8	26.8	7		25

LD:WG107012-4 L49910-1 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421879
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	7.6	7.2	5		25

LD:WG107012-5 L49869-3 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-190
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	24.6	24	2		25

MB:WG107012-6 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L49810

LCS:WG107012-7 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	95	95		80--120

LD:WG107012-8 L49865-11 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421240A
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1.1	2.2	mg/L	17.3	19.6	12		25

MB:WG107012-9 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG107012-10 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	93	93		80--120

LD:WG107012-11 L49889-6 Matrix: GRND WTR Listtype: CVTSS Method: SM2540-D Project: 421422-CHGW
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	15.4	15.6	1		25

LD:WG107012-12 L49935-1 Matrix: GRND WTR Listtype: CVTSS Method: SM2540-D Project: 421422-CHGW
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	<MDL	<MDL			25

King County Environmental Lab Batch Report

Mercer Island Stormwater Monitoring, L49810

WG106952 Field Parameters

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L49810-1	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	STORM WTR	1/4/2010 11:10			WG106952-1, -2, -3, -4	
L49810-1	421195-180		ESS	STORM WTR	1/4/2010 11:10				
L49810-2	421195-180		ESS	STORM WTR	1/4/2010 11:28				
L49810-2	421195-180		ESS-FIELDMETER	STORM WTR	1/4/2010 11:28				
L49810-3	421195-180		ESS	STORM WTR	1/4/2010 9:30				
L49810-3	421195-180		ESS-FIELDMETER	STORM WTR	1/4/2010 9:30				
L49810-4	421195-180		ESS	STORM WTR	1/4/2010 10:00				
L49810-4	421195-180		ESS-FIELDMETER	STORM WTR	1/4/2010 10:00				
L49810-5	421195-180		ESS-FIELDMETER	STORM WTR	1/4/2010 10:30				
L49810-5	421195-180		ESS	STORM WTR	1/4/2010 10:30				
L49810-6	421195-180		ESS	FILTER WTR	1/4/2010 9:35				FFBLK
WG106952-1	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG106952-2	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG106952-3	FREP		ESS-FIELDMETER	STORM WTR					L49810-2 RANGE1
WG106952-4	CS		ESS-FIELDMETER	BLANK WTR					RANGE1

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L49810

Workgroup: WG106952 Field Parameters

CS:WG106952-1 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	77.8	105		90--110
pH, Field			pH	6.86	6.82	0.04		0--.2

CS:WG106952-2 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	78.1	106		90--110
pH, Field			pH	6.86	6.84	0.02		0--.2

FREP:WG106952-3 L49810-2 Matrix: STORM WTR Listtype: ESS-FIELDMETER Method: NONE Project: 421195-180
(Field Replicate)

Parameter	MDL	RDL	Units	Samp Value	EP Value	RPD^	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	88.9	91.7	3		10
Dissolved Oxygen, Field	0.5	1	mg/L	12.2	12	2		20
Sample Temperature, Field			deg C	8.1	8.1	0.03		0.3
pH, Field			pH	7.08	7.12	0.04		0.2

CS:WG106952-4 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	74	78.9	107		90--110
Dissolved Oxygen Saturation, Field			%	100	100.9	101		96--104
pH, Field			pH	6.86	6.91	0.05		0--.2

King County Environmental Lab Batch Report

Mercer Island Stormwater Monitoring, L49810

WG106939 Fecal coliform

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L49810-1	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	STORM WTR	1/4/2010 11:10	1/4/2010 14:00	1/5/2010 13:05	WG106939-1, WG106929-2, -3, -4, -5	
L49810-2	421195-180		MCFC-MF	STORM WTR	1/4/2010 11:28	1/4/2010 14:00	1/5/2010 13:05		
L49810-3	421195-180		MCFC-MF	STORM WTR	1/4/2010 9:30	1/4/2010 14:00	1/5/2010 13:05		
L49810-4	421195-180		MCFC-MF	STORM WTR	1/4/2010 10:00	1/4/2010 14:00	1/5/2010 13:05		
L49810-5	421195-180		MCFC-MF	STORM WTR	1/4/2010 10:30	1/4/2010 14:00	1/5/2010 13:05		
WG106939-1	LD		MCFC-MF	STORM WTR		1/4/2010 14:00	1/5/2010 13:05		L49810-1
WG106929-2	PC		MCFC-MF	BLANK WTR		1/4/2010 15:40	1/5/2010 13:47		QC-PERFORMED:04-JAN-2010
WG106929-3	NC		MCFC-MF	BLANK WTR		1/4/2010 15:40	1/5/2010 13:47		QC-PERFORMED:04-JAN-2010
WG106929-4	BF		MCFC-MF	BLANK WTR		1/4/2010 15:40	1/5/2010 13:47		QC-PERFORMED:04-JAN-2010
WG106929-5	AF		MCFC-MF	BLANK WTR		1/4/2010 15:40	1/5/2010 13:47		QC-PERFORMED:04-JAN-2010

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L49810

Workgroup: WG106939 Fecal coliform

LD:WG106939-1 L49810-1 Matrix: STORM WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	Rlog	P value	Qual
Fecal Coliform			CFU/100ml	390	360	0.03	0.2	N2

PC:WG106929-2 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG106929-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG106929-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG106929-5 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

King County Environmental Lab Batch Report

Mercer Island Stormwater Monitoring, L49810

WG107113 Total Metals

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L49918-2	421196-200	Roads BMP Grant	MTHARD-ICPMS	STORM WTR	1/10/2010 22:56	1/15/2010 11:00	1/20/2010 8:33		
L49918-3	421196-200		MTHARD-ICPMS	STORM WTR	1/10/2010 17:52	1/15/2010 11:00	1/20/2010 8:33		
L49719-1	421195-260	Ravensdale Monthly GW	MTICPMS	GRND WTR	1/11/2010 7:30	1/15/2010 11:00	1/19/2010 11:56		
L49810-2	421195-180	Mercer Island Stormwater Monitoring	MTHARD-ICPMS	STORM WTR	1/4/2010 11:28	1/15/2010 11:00	1/20/2010 8:33		
L49810-4	421195-180		MTHARD-ICPMS	STORM WTR	1/4/2010 10:00	1/15/2010 11:00	1/20/2010 8:33		
L49832-1	423589-090-1	Lower Duwamish Phthalate Studies	MTICPMS	STORM WTR	12/21/2009 0:00	1/15/2010 11:00	1/19/2010 12:12		
L49836-1	421430-300	OCS-Lake Haven Utility District routine testing	MTICPMS	EFFLUENT	1/4/2010 7:48	1/15/2010 11:00	1/19/2010 12:28		
L49843-1	421430-300		MTICPMS	STORM WTR	1/11/2010 11:55	1/15/2010 11:00	1/19/2010 12:33		
L49843-2	421430-300		MTICPMS	STORM WTR	1/11/2010 8:10	1/15/2010 11:00	1/19/2010 12:50		
L49844-1	423589-090-1	Lower Duwamish Phthalate Studies	MTICPMS	STORM WTR	1/4/2010 0:00	1/15/2010 11:00	1/19/2010 12:55		
L49910-1	421879	NPDES Storm Water Monitoring	MTHARD-ICPMS	STORM WTR	1/4/2010 5:38	1/15/2010 11:00	1/20/2010 8:33		
L49910-2	421879		MTHARD-ICPMS	STORM WTR	1/4/2010 0:59	1/15/2010 11:00	1/20/2010 8:33		
L49910-3	421879		MTHARD-ICPMS	STORM WTR	1/4/2010 3:51	1/15/2010 11:00	1/20/2010 8:33		
L49923-1	421879		MTHARD-ICPMS	STORM WTR	1/10/2010 22:47	1/15/2010 11:00	1/20/2010 8:33	WG107113-1, -2, -5, -6	
L49961-1	421169	QA/QC	MTICPMS	FRESH WTR	1/13/2010 0:00	1/15/2010 11:00	1/19/2010 13:33		
L49961-2	421169		MTICPMS	FRESH WTR	1/13/2010 0:00	1/15/2010 11:00	1/19/2010 13:38		
L49984-1	421879	NPDES Storm Water Monitoring	MTHARD-ICPMS	STORM WTR	1/13/2010 14:31	1/15/2010 11:00	1/20/2010 8:33		
L49984-2	421879		MTHARD-ICPMS	STORM WTR	1/14/2010 0:03	1/15/2010 11:00	1/20/2010 8:33		
L49984-3	421879		MTHARD-ICPMS	STORM WTR	1/14/2010 0:15	1/15/2010 11:00	1/20/2010 8:33		
L49984-9	421879		MTHARD-ICPMS	STORM WTR	1/13/2010 0:00	1/15/2010 11:00	1/20/2010 8:33		
WG107113-1	MB		MTHARD-ICPMS	BLANK WTR		1/15/2010 11:00	1/20/2010 8:33		METHOD BLANK
WG107113-2	SB		MTHARD-ICPMS	BLANK WTR		1/15/2010 11:00	1/20/2010 8:33		WG107113-1 MS-20 SPIKE BLANK
WG107113-3	LD		MTICPMS	STORM WTR		1/15/2010 11:00	1/19/2010 12:17		L49832-1 RPD-LIQ LAB DUPLICATE
WG107113-4	MS		MTICPMS	STORM WTR		1/15/2010 11:00	1/19/2010 12:23		L49832-1 MS-20 MATRIX SPIKE
WG107113-5	LD		MTHARD-ICPMS	STORM WTR		1/15/2010 11:00	1/20/2010 8:33		L49984-2 RPD-LIQ LAB DUPLICATE
WG107113-6	MS		MTHARD-ICPMS	STORM WTR		1/15/2010 11:00	1/20/2010 8:33		L49984-2 MS-20 MATRIX SPIKE

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L49810

Workgroup: WG107113 Total Metals

MB:WG107113-1 Matrix: BLANK WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Hardness, Calc	0.066	0.331	mg CaCO3/L	<MDL	

MB:WG107113-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Calcium, Total, ICP-MS	10	50	ug/L	<MDL	
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	
Iron, Total, ICP-MS	10	50	ug/L	<MDL	
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Magnesium, Total, ICP-MS	10	50	ug/L	<MDL	
Manganese, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Zinc, Total, ICP-MS	0.5	2.5	ug/L	1.4	B

SB:WG107113-2 MB:WG107113-1 Matrix: BLANK WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	<MDL	33.1	31.4	95		85--115

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L49810

SB:WG107113-2 MB:WG107113-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.8	94		85--115
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.3	97		85--115
Calcium, Total, ICP-MS	10	50	ug/L	<MDL	5000	4650	93		85--115
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	18.1	91		85--115
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	20	19.6	98		85--115
Iron, Total, ICP-MS	10	50	ug/L	<MDL	5000	4620	92		85--115
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.5	93		85--115
Magnesium, Total, ICP-MS	10	50	ug/L	<MDL	5000	4800	96		85--115
Manganese, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	17.8	89		85--115
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.7	98		85--115
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	17.8	89		85--115
Zinc, Total, ICP-MS	0.5	2.5	ug/L	1.4	20	21.3	99		85--115

LD:WG107113-3 L49832-1 Matrix: STORM WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 423589-090-1
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	2.04	1.99	2		20
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	0.13	0.14			20
Calcium, Total, ICP-MS	10	50	ug/L	14000	13700	2		20
Chromium, Total, ICP-MS	0.2	1	ug/L	2.61	2.61	0		20
Copper, Total, ICP-MS	0.4	2	ug/L	16.4	16.1	1		20
Iron, Total, ICP-MS	10	50	ug/L	1560	1540	1		20
Lead, Total, ICP-MS	0.1	0.5	ug/L	6.69	6.58	2		20
Magnesium, Total, ICP-MS	10	50	ug/L	5240	5200	1		20
Manganese, Total, ICP-MS	0.1	0.5	ug/L	113	109	3		20
Nickel, Total, ICP-MS	0.1	0.5	ug/L	4.37	4.3	2		20
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	0.055			20
Zinc, Total, ICP-MS	0.5	2.5	ug/L	73.1	71.3	2		20

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L49810

MS:WG107113-4 L49832-1 Matrix: STORM WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 423589-090-1
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	2.04	20	20.6	93		75--125
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	0.13	20	19	94		75--125
Calcium, Total, ICP-MS	10	50	ug/L	14000	5000	18500	91		75--125
Chromium, Total, ICP-MS	0.2	1	ug/L	2.61	20	20.5	89		75--125
Copper, Total, ICP-MS	0.4	2	ug/L	16.4	20	35.2	94		75--125
Iron, Total, ICP-MS	10	50	ug/L	1560	5000	6160	92		75--125
Lead, Total, ICP-MS	0.1	0.5	ug/L	6.69	20	24.6	89		75--125
Magnesium, Total, ICP-MS	10	50	ug/L	5240	5000	9950	94		75--125
Manganese, Total, ICP-MS	0.1	0.5	ug/L	113	20.	128			(No MS/MSD %Rec. due to 4x rule)
Nickel, Total, ICP-MS	0.1	0.5	ug/L	4.37	20	24.5	101		75--125
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	17.1	85		75--125
Zinc, Total, ICP-MS	0.5	2.5	ug/L	73.1	20	88.7	78		75--125

LD:WG107113-5 L49984-2 Matrix: STORM WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 421879
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	31.3	31.1	1		20

LD:WG107113-5 L49984-2 Matrix: STORM WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 421879
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Calcium, Total, ICP-MS	10	50	ug/L	8900	8820	1		20
Copper, Total, ICP-MS	0.4	2	ug/L	1.4	1.4			20
Magnesium, Total, ICP-MS	10	50	ug/L	2200	2200	0		20

MS:WG107113-6 L49984-2 Matrix: STORM WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 421879
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	31.3	33.1	62.4	94		75--125

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L49810

MS:WG107113-6 L49984-2 Matrix: STORM WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 421879
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Calcium, Total, ICP-MS	10	50	ug/L	8900	5000	13500	91		75--125
Copper, Total, ICP-MS	0.4	2	ug/L	1.4	20	19.3	90		75--125
Magnesium, Total, ICP-MS	10	50	ug/L	2200	5000	7000	96		75--125

King County Environmental Lab Batch Report

Mercer Island Stormwater Monitoring, L49810

WG107050 Dissolved Metals

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L49889-4	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	MTICPMS-DISS	GRND WTR	1/8/2010 8:25	1/12/2010 13:00	1/12/2010 17:00		
L49889-5	421422-CHGW		MTICPMS-DISS	GRND WTR	1/7/2010 8:10	1/12/2010 13:00	1/12/2010 17:06		
L49889-6	421422-CHGW		MTICPMS-DISS	GRND WTR	1/7/2010 8:55	1/12/2010 13:00	1/12/2010 17:24		
L49890-1	421422-CHGW		MTICPMS-DISS	GRND WTR	1/7/2010 11:00	1/12/2010 13:00	1/12/2010 17:30		
L49898-1	421422-CHGW		MTICPMS-DISS	GRND WTR	1/8/2010 7:00	1/12/2010 13:00	1/12/2010 17:36		
L49898-2	421422-CHGW		MTICPMS-DISS	GRND WTR	1/8/2010 5:45	1/12/2010 13:00	1/12/2010 17:42		
L49935-1	421422-CHGW		MTICPMS-DISS	GRND WTR	1/8/2010 11:10	1/12/2010 13:00	1/12/2010 17:48		
L49935-2	421422-CHGW		MTICPMS-DISS	GRND WTR	1/8/2010 9:35	1/12/2010 13:00	1/12/2010 18:07		
L49935-4	421422-CHGW		MTICPMS-DISS	GRND WTR	1/11/2010 11:55	1/12/2010 13:00	1/12/2010 18:13		
L49954-1	421422-CHGW		MTICPMS-DISS	GRND WTR	1/11/2010 10:35	1/12/2010 13:00	1/12/2010 18:19		
L49954-2	421422-CHGW		MTICPMS-DISS	GRND WTR	1/11/2010 10:15	1/12/2010 13:00	1/12/2010 18:25		
L49810-2	421195-180	Mercer Island Stormwater Monitoring	MTICPMS-DISS	STORM WTR	1/4/2010 11:28	1/12/2010 13:00	1/12/2010 16:05		
L49810-4	421195-180		MTICPMS-DISS	STORM WTR	1/4/2010 10:00	1/12/2010 13:00	1/12/2010 16:11		
L49810-6	421195-180		MTICPMS-DISS	FILTER WTR	1/4/2010 9:35	1/12/2010 13:00	1/12/2010 15:52	WG107050-1, -2, -3, -4	FFBLK
L49832-1	423589-090-1	Lower Duwamish Phthalate Studies	MTICPMS-DISS	STORM WTR	12/21/2009 0:00	1/12/2010 13:00	1/12/2010 16:17		
L49844-1	423589-090-1		MTICPMS-DISS	STORM WTR	1/4/2010 0:00	1/12/2010 13:00	1/12/2010 16:23		
L49910-1	421879	NPDES Storm Water Monitoring	MTICPMS-DISS	STORM WTR	1/4/2010 5:38	1/12/2010 13:00	1/12/2010 16:29		
L49910-2	421879		MTICPMS-DISS	STORM WTR	1/4/2010 0:59	1/12/2010 13:00	1/12/2010 16:35		
L49910-3	421879		MTICPMS-DISS	STORM WTR	1/4/2010 3:51	1/12/2010 13:00	1/12/2010 16:53		
L49910-8	421879		MTICPMS-DISS	FILTER WTR	1/5/2010 10:35	1/12/2010 13:00	1/12/2010 15:59		Field Filter Blank, Metals
WG107050-1	MB		MTICPMS-DISS	BLANK WTR		1/12/2010 13:00	1/12/2010 15:40		METHOD BLANK
WG107050-2	SB		MTICPMS-DISS	BLANK WTR		1/12/2010 13:00	1/12/2010 15:46		WG107050-1 MS-20 SPK BLK
WG107050-3	LD		MTICPMS-DISS	GRND WTR		1/12/2010 13:00	1/12/2010 17:12		L49889-5 RPD-LIQ LAB DUP
WG107050-4	MS		MTICPMS-DISS	GRND WTR		1/12/2010 13:00	1/12/2010 17:18		L49889-5 MS-20 MAT SPK

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L49810

Workgroup: WG107050 Dissolved Metals

MB:WG107050-1 Matrix: BLANK WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Potassium, Dissolved, ICP-MS	100	500	ug/L	<MDL	
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Sodium, Dissolved, ICP-MS	20	100	ug/L	<MDL	
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L49810

SB:WG107050-2 MB:WG107050-1 Matrix: BLANK WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	20	20.4	102		85--115
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.6	98		85--115
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.3	96		85--115
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.5	103		85--115
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.2	101		85--115
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4880	98		85--115
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	20	18.9	94		85--115
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.5	97		85--115
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	20	20	100		85--115
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4850	97		85--115
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.6	98		85--115
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	5240	105		85--115
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.5	102		85--115
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.9	100		85--115
Potassium, Dissolved, ICP-MS	100	500	ug/L	<MDL	5000	4860	97		85--115
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.4	102		85--115
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.9	105		85--115
Sodium, Dissolved, ICP-MS	20	100	ug/L	<MDL	5000	5100	102		85--115
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	20	20.6	103		85--115
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	20	19.9	99		85--115
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	22.1	111		85--115

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L49810

LD:WG107050-3 L49889-5 Matrix: GRND WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421422-CHGW
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	<MDL			20
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	0.694	0.689	1		20
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	2.16	2.14	1		20
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Calcium, Dissolved, ICP-MS	10	50	ug/L	15200	15300	0		20
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	<MDL			20
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	<MDL			20
Iron, Dissolved, ICP-MS	10	50	ug/L	3700	3700	0		20
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Magnesium, Dissolved, ICP-MS	10	50	ug/L	10300	10300	0		20
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	151	150	0		20
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Potassium, Dissolved, ICP-MS	100	500	ug/L	942	947	1		20
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Sodium, Dissolved, ICP-MS	20	100	ug/L	6370	6250	2		20
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	<MDL			20
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	<MDL			20
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L49810

MS:WG107050-4 L49889-5 Matrix: GRND WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421422-CHGW
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	20	20.6	103		75--125
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	0.694	20	21	101		75--125
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	2.16	20	21.5	96		75--125
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.5	103		75--125
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.1	100		75--125
Calcium, Dissolved, ICP-MS	10	50	ug/L	15200	5000	19800	93		75--125
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	20	19	95		75--125
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	18.1	91		75--125
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	20	19.6	98		75--125
Iron, Dissolved, ICP-MS	10	50	ug/L	3700	5000	8560	97		75--125
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.6	98		75--125
Magnesium, Dissolved, ICP-MS	10	50	ug/L	10300	5000	14100	76		75--125
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	151	20	169			(No MS/MSD %Rec. due to 4x rule)
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.9	100		75--125
Potassium, Dissolved, ICP-MS	100	500	ug/L	942	5000	5790	97		75--125
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	21.5	108		75--125
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.6	103		75--125
Sodium, Dissolved, ICP-MS	20	100	ug/L	6370	5000	11400	101		75--125
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	20	20.5	102		75--125
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	20	19.9	100		75--125
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.5	102		75--125

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

April 12, 2010

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180
Mercer Island Stormwater Monitoring,
Stormwater Samples, L50109-1 to 6

Attached is the comprehensive report for the stormwater samples collected and delivered to the laboratory on March 11, 2010. The samples were analyzed in the Trace Metals, Microbiology and Conventionals units of the laboratory. A comprehensive report #14057 was send via email on April 12, 2010. QA/QC data summaries are included for your information.

Conventionals:
There were no anomalies associated with the preparation and the analysis of these samples.

Metals:
There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:
There were no anomalies associated with the preparation and the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

King County Environmental Lab Analytical Report

	Project:	421195-180					Project:	421195-180					Project:	421195-180							
	Locator:	MERCERISL06					Locator:	MERCERISL10					Locator:	MERCERISL26							
	Descrip:	R/D FACILITY SOUTH					Descrip:	SE 22ND ST, NEAR M					Descrip:	FOREST AVE. AND 84							
	Sample:	L50109-1					Sample:	L50109-2					Sample:	L50109-3							
	Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LG STORM WTR							
	ColDate:	3/11/10 12:42					ColDate:	3/11/10 13:00					ColDate:	3/11/10 11:16							
	TimeSpan:						TimeSpan:						TimeSpan:								
	TotalSolid:						TotalSolid:						TotalSolid:								
	ClientLoc:						ClientLoc:						ClientLoc:								
	SampDepth:						SampDepth:						SampDepth:								
	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**				
CV SM2540-D																					
Total Suspended Solids	20.3		0.5	1	mg/L		11.1		0.6	1.2	mg/L		14.7		0.5	1	mg/L				
ES NONE																					
Conductivity, Field	120		0.5	10	umhos/cm		94.6		0.5	10	umhos/cm		205		0.5	10	umhos/cm				
Discharge Rate of Stream	1		0.05	0.1	cfs		2.2		0.05	0.1	cfs		0.3		0.05	0.1	cfs				
Dissolved Oxygen Saturation, Field	106.6				%		102.5				%		103.2				%				
Dissolved Oxygen, Field	12.7		0.5	1	mg/L		11.8		0.5	1	mg/L		12.3		0.5	1	mg/L				
Field Personnel	JP				none		JP				none		JP				none				
Sample Temperature, Field	7.3				deg C		9.1				deg C		7.3				deg C				
Turbidity, Field	14		0.5	2	NTU		15.3		0.5	2	NTU		13.2		0.5	2	NTU				
pH, Field	7.7				pH		7.35				pH		7.55				pH				
MC SM 9222D 20TH																					
Fecal Coliform	420				CFU/100ml		690				CFU/100ml		140				CFU/100ml				
MT EPA 200.8*SW846 6020A																					
Calcium, Total, ICP-MS							8840		10	50	ug/L										
Chromium, Dissolved, ICP-MS							0.56	<RDL	0.2	1	ug/L										
Copper, Dissolved, ICP-MS							4.76		0.4	2	ug/L										
Lead, Dissolved, ICP-MS							0.16	<RDL	0.1	0.5	ug/L										
Magnesium, Total, ICP-MS							4120		10	50	ug/L										
Zinc, Dissolved, ICP-MS							32.1		0.5	2.5	ug/L										
MT EPA 200.8/SW846 6020A*SM2340B																					
Hardness, Calc							39		0.066	0.331	mg CaCO3/L										
ES NONE																					
Sample Function																					

King County Environmental Lab Analytical Report

	Project:	421195-180					Project:	421195-180					Project:	421195-180							
	Locator:	MERCERISL32					Locator:	MERCERISL42					Locator:	FFBLANK							
	Descrip:	CREEK NEAR HOLLYHI					Descrip:	E. MERCER WAY					Descrip:	FIELD FILTER BLANK							
	Sample:	L50109-4					Sample:	L50109-5					Sample:	L50109-6							
	Matrix:	LG STORM WTR					Matrix:	LG STORM WTR					Matrix:	LM FILTER WTR							
	ColDate:	3/11/10 11:40					ColDate:	3/11/10 12:00					ColDate:	3/11/10 11:10							
	TimeSpan:						TimeSpan:						TimeSpan:								
	TotalSolid:						TotalSolid:						TotalSolid:								
	ClientLoc:						ClientLoc:						ClientLoc:								
	SampDepth:						SampDepth:						SampDepth:								
	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**						
CV SM2540-D																					
Total Suspended Solids	10.7		0.6	1.2	mg/L	30.6		1	2	mg/L											
ES NONE																					
Conductivity, Field	85.9		0.5	10	umhos/cm	163		0.5	10	umhos/cm											
Discharge Rate of Stream	0.7		0.05	0.1	cfs	0.5		0.05	0.1	cfs											
Dissolved Oxygen Saturation, Field	105.9				%	103				%											
Dissolved Oxygen, Field	12.6		0.5	1	mg/L	12.4		0.5	1	mg/L											
Field Personnel	JP				none	JP				none											
Sample Temperature, Field	7.6				deg C	7				deg C											
Turbidity, Field	13.1		0.5	2	NTU	22.8		0.5	2	NTU											
pH, Field	7.36				pH	7.55				pH											
MC SM 9222D 20TH																					
Fecal Coliform	140				CFU/100ml	110				CFU/100ml											
MT EPA 200.8*SW846 6020A																					
Calcium, Total, ICP-MS	8290		10	50	ug/L																
Chromium, Dissolved, ICP-MS	3.2		0.2	1	ug/L							<MDL	0.2	1	ug/L						
Copper, Dissolved, ICP-MS	4.88		0.4	2	ug/L							<MDL	0.4	2	ug/L						
Lead, Dissolved, ICP-MS		<MDL	0.1	0.5	ug/L							<MDL	0.1	0.5	ug/L						
Magnesium, Total, ICP-MS	3400		10	50	ug/L																
Zinc, Dissolved, ICP-MS	14		0.5	2.5	ug/L							<MDL	0.5	2.5	ug/L						
MT EPA 200.8/SW846 6020A*SM2340B																					
Hardness, Calc	34.7		0.066	0.331	mg CaCO3/L																
ES NONE																					
Sample Function											FFBLK-Metals				none						

King County Environmental Lab Analytical MATRIX Report

Owner: SEEDPAK
Matrix Class: LIQUID
User select: WET Weight Basis

LOCATOR	PROJECT	SAMPLE	Conductivity, Field	Discharge Rate of Stream	Dissolved Oxygen Saturation, Field	Dissolved Oxygen, Field	Sample Temperature, Field	Turbidity, Field	pH, Field	Total Suspended Solids	Fecal Coliform	Calcium, Total, ICP-MS	Chromium, Dissolved, ICP-MS	Copper, Dissolved, ICP-MS	Lead, Dissolved, ICP-MS	Magnesium, Total, ICP-MS	Zinc, Dissolved, ICP-MS	Hardness, Calc
			umhos/cm	cfs	%	mg/L	deg C	NTU	pH	mg/L	CFU/100ml	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg CaCO3/L
MERCERISL06	421195-180	L50109-1	120	1	106.6	12.7	7.3	14	7.7	20.3	420							
MERCERISL10	421195-180	L50109-2	94.6	2.2	102.5	11.8	9.1	15.3	7.35	11.1	690	8840	0.56	4.76	0.16	4120	32.1	39
MERCERISL26	421195-180	L50109-3	205	0.3	103.2	12.3	7.3	13.2	7.55	14.7	140							
MERCERISL32	421195-180	L50109-4	85.9	0.7	105.9	12.6	7.6	13.1	7.36	10.7	140	8290	3.2	4.88		3400	14	34.7
MERCERISL42	421195-180	L50109-5	163	0.5	103	12.4	7	22.8	7.55	30.6	110							
FFBLANK	421195-180	L50109-6																

Login: P50109

WLRD-MERCER ISLAND WQ
STORM MONITORING

Personnel: J. POWER

Project: 421195-180

CHAIN OF CUSTODY

RELINQUISHED BY Jerry Power	Date 3/11/10	Time 1350
RECEIVED BY [illegible]	Date 3-11-10	Time 1350
Sample Number(s) L50109 1-6		(All)

SAMPLENUM	P50109-1	P50109-2	P50109-3
QC LINK			
LOCATOR	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	T_KC_MERCERSTRM-3
Locator Desc	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	FOREST AVE. AND 84TH AVE SE
SITE	KING COUNTY	KING COUNTY	KING COUNTY
COMMENTS	Need DOT Key	North Island	84th Ave-Weyburn-West Island
Start Date/Time	11-MAR-10/1242	/1300	/1116
End Date/Time			
Time Span			
Sample Depth			
COND, FIELD	120.4	94.6	204.9
DO SAT, FIELD	106.6	102.5	103.2
DO, FIELD	12.72	11.82	12.32
PERSONNEL	JP	JP	JP
PH, FIELD	7.70	7.35	7.55
SAMP TEMP	7.33	9.05	7.33
STRM FLOW	1.0 CFS	2.2 CFS	0.3 CFS
TURB, FIELD	14.0	15.3	13.2
SAMP FUNC	**********	**********	**********
Dept. Matrix Prod	3 LG TSS 5 LG FC-MF	3 LG TSS 5 LG FC-MF 6 LG CA-ICPMS 6 LG CR-ICPMS, DISS 6 LG CU-ICPMS, DISS 6 LG ICPMS-HARDNESS 6 LG MG-ICPMS 6 LG PB-ICPMS, DISS 6 LG ZN-ICPMS, DISS	3 LG TSS 5 LG FC-MF

Login: P50109

WLRD-MERCER ISLAND WQ
STORM MONITORING

Personnel: JP

Project: 421195-180

SAMPLENUM	P50109-4	P50109-5	P50109-6
QC LINK			FFB
LOCATOR	MERCERISL32	MERCERISL42	FFBLANK
Short Loc. Desc.	T_KC_MERCERSTRM-4	T_KC_MERCERSTRM-5	FFBLAN K
Locator Desc	CREEK NEAR HOLLYHILL DRIVE AND W. MERCER	E. MERCER WAY	FIELD FILTER BLANK
SITE	KING COUNTY	KING COUNTY	METRO
COMMENTS	Holly Hill Dr-West Island	HYDROLAB FLAP Retention Stucture-East Island	Field filter blank Metals
Start Date/Time	11-MAR-10 / 1140	/ 1200	/ 1110
End Date/Time			
Time Span			
Sample Depth			
COND, FIELD	85.9	163.4	**********
DO SAT, FIELD	105.9	103.0	**********
DO, FIELD	12.56	12.40	**********
PERSONNEL	JP	JP	**********
PH, FIELD	7.36	7.55	**********
SAMP TEMP	7.61	6.97	**********
STRM FLOW	0.7 CFS	0.5 CFS	**********
TURB, FIELD	13.1	22.8	**********
SAMP FUNC	**********	**********	
Dept. Matrix Prod	3 LG TSS 5 LG FC-MF 6 LG CA-ICPMS 6 LG CR-ICPMS, DISS 6 LG CU-ICPMS, DISS 6 LG ICPMS-HARDNESS 6 LG MG-ICPMS 6 LG PB-ICPMS, DISS 6 LG ZN-ICPMS, DISS	3 LG TSS 5 LG FC-MF	6 LM CR-ICPMS, DISS 6 LM CU-ICPMS, DISS 6 LM PB-ICPMS, DISS 6 LM ZN-ICPMS, DISS

King County Environmental Lab Batch Report

Mercer Island Stormwater Monitoring, L50109

WG107988 TSS

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L49939-1	421422-CHSW-P	SWD-CHSW P Cedar Hills Surface Water	CVTSS	FRESH WTR	3/11/2010 8:20	3/12/2010 10:30	3/15/2010 13:15	WG107988-1, -2, -3, -4, -5, -6, -7	
L49939-2	421422-CHSW-P		CVTSS	FRESH WTR	3/11/2010 5:55	3/12/2010 10:30	3/15/2010 13:16		
L50325-1	421422-CHSW-P2	SWD-CHSW P - 2 Cedar Hills Surface Water Permit 2	CVTSS	FRESH WTR	3/10/2010 8:50	3/12/2010 10:30	3/15/2010 13:17		
L50325-2	421422-CHSW-P2		CVTSS	FRESH WTR	3/10/2010 8:30	3/12/2010 10:30	3/15/2010 13:17		
L50325-3	421422-CHSW-P2		CVTSS	FRESH WTR	3/10/2010 9:10	3/12/2010 10:30	3/15/2010 13:20		
L49870-1	421240-210	Wet Weather Survey(Strmwtr)	CVTSS	STORM WTR	3/11/2010 12:05	3/12/2010 10:30	3/15/2010 13:27		
L49870-2	421240-210		CVTSS	STORM WTR	3/11/2010 12:28	3/12/2010 10:30	3/15/2010 13:28		
L49870-3	421240-210		CVTSS	STORM WTR	3/11/2010 13:55	3/12/2010 10:30	3/15/2010 13:30		
L49870-4	421240-210		CVTSS	STORM WTR	3/11/2010 14:22	3/12/2010 10:30	3/15/2010 13:30		
L49870-5	421240-210		CVTSS	STORM WTR	3/11/2010 14:55	3/12/2010 10:30	3/15/2010 13:31		
L49870-6	421240-210		CVTSS	STORM WTR	3/11/2010 15:24	3/12/2010 10:30	3/15/2010 13:32		
L49871-1	421240-210		CVTSS	STORM WTR	3/11/2010 11:05	3/12/2010 10:30	3/15/2010 13:45		
L49871-2	421240-210		CVTSS	STORM WTR	3/11/2010 11:47	3/12/2010 10:30	3/15/2010 13:46		
L49871-3	421240-210		CVTSS	STORM WTR	3/11/2010 12:16	3/12/2010 10:30	3/15/2010 13:46		
L49871-4	421240-210		CVTSS	STORM WTR	3/11/2010 13:03	3/12/2010 10:30	3/15/2010 13:47		
L49871-5	421240-210		CVTSS	STORM WTR	3/11/2010 13:40	3/12/2010 10:30	3/15/2010 13:47		
L49871-6	421240-210		CVTSS	STORM WTR	3/11/2010 14:26	3/12/2010 10:30	3/15/2010 13:48		
L49872-1	421240-210		CVTSS	STORM WTR	3/11/2010 10:20	3/12/2010 10:30	3/15/2010 13:48		
L49872-2	421240-210		CVTSS	STORM WTR	3/11/2010 11:02	3/12/2010 10:30	3/15/2010 13:50		
L49872-3	421240-210		CVTSS	STORM WTR	3/11/2010 11:41	3/12/2010 10:30	3/15/2010 13:51		
L49872-4	421240-210		CVTSS	STORM WTR	3/11/2010 12:20	3/12/2010 10:30	3/15/2010 13:52		
L49872-5	421240-210		CVTSS	STORM WTR	3/11/2010 12:45	3/12/2010 10:30	3/15/2010 13:53		
L49872-6	421240-210		CVTSS	STORM WTR	3/11/2010 13:16	3/12/2010 10:30	3/15/2010 13:54		
L49872-7	421240-210		CVTSS	STORM WTR	3/11/2010 14:00	3/12/2010 10:30	3/15/2010 13:56		
L49872-8	421240-210		CVTSS	STORM WTR	3/11/2010 14:30	3/12/2010 10:30	3/15/2010 13:57		
L50109-1	421195-180	Mercer Island Stormwater Monitoring	CVTSS	STORM WTR	3/11/2010 12:42	3/12/2010 10:30	3/15/2010 13:21		
L50109-2	421195-180		CVTSS	STORM WTR	3/11/2010 13:00	3/12/2010 10:30	3/15/2010 13:21		
L50109-3	421195-180		CVTSS	STORM WTR	3/11/2010 11:16	3/12/2010 10:30	3/15/2010 13:22		
L50109-4	421195-180		CVTSS	STORM WTR	3/11/2010 11:40	3/12/2010 10:30	3/15/2010 13:23		
L50109-5	421195-180		CVTSS	STORM WTR	3/11/2010 12:00	3/12/2010 10:30	3/15/2010 13:24		
WG107988-1	MB		CVTSS	BLANK WTR		3/12/2010 10:30	3/15/2010 13:14		MB2 100312 10:30
WG107988-2	LCS		CVTSS	BLANK WTR		3/12/2010 10:30	3/15/2010 13:14		LEVEL1
WG107988-3	LD		CVTSS	FRESH WTR		3/12/2010 10:30	3/15/2010 13:18		L50325-2
WG107988-4	LD		CVTSS	STORM WTR		3/12/2010 10:30	3/15/2010 13:24		L50109-5
WG107988-5	MB		CVTSS	BLANK WTR		3/12/2010 10:30	3/15/2010 13:26		MB3 100312 10:30
WG107988-6	LCS		CVTSS	BLANK WTR		3/12/2010 10:30	3/15/2010 13:26		LEVEL1
WG107988-7	LD		CVTSS	STORM WTR		3/12/2010 10:30	3/15/2010 13:33		L49870-6

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Mercer Island Stormwater Monitoring, L50109

Workgroup: WG107988 TSS

MB:WG107988-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG107988-2 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	99	99		80--120

LD:WG107988-3 L50325-2 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421422-CHSW-P2
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	15.6	16.6	6		25

LD:WG107988-4 L50109-5 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	30.6	30.2	1		25

MB:WG107988-5 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG107988-6 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	100	100		80--120

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Mercer Island Stormwater Monitoring, L50109

LD:WG107988-7 L49870-6 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421240-210
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1.3	2.5	mg/L	50.5	52.8	4		25

King County Environmental Lab Batch Report

Mercer Island Stormwater Monitoring, L50109

WG108009 Field Parameters

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L50109-1	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	STORM WTR	3/11/2010 12:42			WG108009-1, -2, -3, -4	
L50109-2	421195-180		ESS-FIELDMETER	STORM WTR	3/11/2010 13:00				
L50109-3	421195-180		ESS-FIELDMETER	STORM WTR	3/11/2010 11:16				
L50109-4	421195-180		ESS-FIELDMETER	STORM WTR	3/11/2010 11:40				
L50109-5	421195-180		ESS-FIELDMETER	STORM WTR	3/11/2010 12:00				
WG108009-1	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG108009-2	FREP		ESS-FIELDMETER	STORM WTR					L50109-5 RANGE1
WG108009-3	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG108009-4	CS		ESS-FIELDMETER	BLANK WTR					RANGE1

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L50109

Workgroup: WG108009 Field Parameters

CS:WG108009-1 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	74	100		90--110
pH, Field			pH	6.86	6.82	0.04		0--.2

FREP:WG108009-2 L50109-5 Matrix: STORM WTR Listtype: ESS-FIELDMETER Method: NONE Project: 421195-180
(Field Replicate)

Parameter	MDL	RDL	Units	Samp Value	EP Value	RPD^	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	163	163	0		10
Dissolved Oxygen, Field	0.5	1	mg/L	12.4	12.4	0		20
Sample Temperature, Field			deg C	7	7	0		0.3
pH, Field			pH	7.55	7.55	0		0.2

CS:WG108009-3 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73	99		90--110
pH, Field			pH	6.86	6.92	0.06		0--.2

CS:WG108009-4 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	74.3	101		90--110
Dissolved Oxygen Saturation, Field			%	100	101.7	102		96--104
pH, Field			pH	6.86	6.91	0.05		0--.2

WG107960 Fecal coliform

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L50109-1	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	STORM WTR	3/11/2010 12:42	3/11/2010 14:20	3/12/2010 14:15	WG107940-2, -3, -4, -5	
L50109-2	421195-180		MCFC-MF	STORM WTR	3/11/2010 13:00	3/11/2010 14:20	3/12/2010 14:15		
L50109-3	421195-180		MCFC-MF	STORM WTR	3/11/2010 11:16	3/11/2010 14:20	3/12/2010 14:15		
L50109-4	421195-180		MCFC-MF	STORM WTR	3/11/2010 11:40	3/11/2010 14:20	3/12/2010 14:15		
L50109-5	421195-180		MCFC-MF	STORM WTR	3/11/2010 12:00	3/11/2010 14:20	3/12/2010 14:15		
WG107940-2	PC		MCFC-MF	BLANK WTR		3/11/2010 16:50	3/12/2010 15:00		QC-PERFORMED: 11 MAR-10
WG107940-3	NC		MCFC-MF	BLANK WTR		3/11/2010 16:50	3/12/2010 15:00		QC-PERFORMED: 11 MAR-10
WG107940-4	BF		MCFC-MF	BLANK WTR		3/11/2010 16:50	3/12/2010 15:00		QC-PERFORMED: 11 MAR-10
WG107940-5	AF		MCFC-MF	BLANK WTR		3/11/2010 16:50	3/12/2010 15:00		QC-PERFORMED: 11 MAR-10

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Mercer Island Stormwater Monitoring, L50109

Workgroup: WG107960 Fecal coliform

PC:WG107940-2 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG107940-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG107940-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG107940-5 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

WG108079 Total Metals

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L49939-1	421422-CHSW-P	SWD-CHSW P Cedar Hills Surface Water	MTICPMS	FRESH WTR	3/11/2010 8:20	3/17/2010 12:30	3/22/2010 13:18	WG108079-1, -2, -3, -4, -5, -6, -7, -8	
L49939-2	421422-CHSW-P		MTICPMS	FRESH WTR	3/11/2010 5:55	3/17/2010 12:30	3/22/2010 13:24		
L49941-1	421422-CHSW-A5-TD	SWD-CHSW - A5 TD Cedar Hills Surface Area	MTICPMS	FRESH WTR	3/11/2010 6:30	3/17/2010 12:30	3/22/2010 13:42		
L49941-4	421422-CHSW-A5-TD		MTICPMS	FRESH WTR	3/11/2010 7:35	3/17/2010 12:30	3/22/2010 14:00		
L50325-1	421422-CHSW-P2	SWD-CHSW P - 2 Cedar Hills Surface Water Permit 2	MTICPMS	FRESH WTR	3/10/2010 8:50	3/17/2010 12:30	3/22/2010 14:29		
L50325-2	421422-CHSW-P2		MTICPMS	FRESH WTR	3/10/2010 8:30	3/17/2010 12:30	3/22/2010 14:35		
L50325-3	421422-CHSW-P2		MTICPMS	FRESH WTR	3/10/2010 9:10	3/17/2010 12:30	3/22/2010 14:53		
L50344-1	421184-110	OCS-City of Enumclaw	MTICPMS	INFLUENT	3/15/2010 8:00	3/17/2010 12:30	3/22/2010 14:59		
L50344-2	421184-110		MTICPMS	EFFLUENT	3/15/2010 8:00	3/17/2010 12:30	3/22/2010 15:05		
L49495-1	421185	WP INPLANT 3 Day INTENSIVE STUDY	MTICPMS	STORM WTR	3/12/2010 8:05	3/17/2010 12:30	3/22/2010 13:01		
L50109-2	421195-180	Mercer Island Stormwater Monitoring	MTHARD-ICPMS	STORM WTR	3/11/2010 13:00	3/17/2010 12:30	3/24/2010 15:20	WG108079-1, -2, -7, -8	
L50109-4	421195-180		MTHARD-ICPMS	STORM WTR	3/11/2010 11:40	3/17/2010 12:30	3/24/2010 15:20		
L50155-1	421936-100	Carnation Treatment Plant EDC Study	MTICPMS	INFLUENT	2/24/2010 7:52	3/17/2010 12:30	3/22/2010 14:17	WG108079-1, -2, -3, -4, -5, -6, -7, -8	
L50155-2	421936-100		MTICPMS	EFFLUENT	2/24/2010 8:01	3/17/2010 12:30	3/22/2010 14:23		
L50360-1	421879-220	NPDES SW Sammamish	MTHARD-ICPMS	STORM WTR	3/3/2010 0:35	3/17/2010 12:30	3/24/2010 15:20	WG108079-1, -2, -7, -8	
L50360-2	421879-220		MTHARD-ICPMS	STORM WTR	3/3/2010 0:04	3/17/2010 12:30	3/24/2010 15:20		
L50360-3	421879-220		MTHARD-ICPMS	STORM WTR	3/3/2010 0:59	3/17/2010 12:30	3/24/2010 15:20		
L50360-4	421879-220		MTHARD-ICPMS	STORM WTR	3/3/2010 0:15	3/17/2010 12:30	3/24/2010 15:22		
L50389-1	421879-210	NPDES SW Fall City	MTHARD-ICPMS	STORM WTR	3/11/2010 13:18	3/17/2010 12:30	3/24/2010 15:20		
L50389-2	421879-210		MTHARD-ICPMS	STORM WTR	3/11/2010 9:34	3/17/2010 12:30	3/24/2010 15:20		
WG108079-1	MB		MTHARD-ICPMS	BLANK WTR		3/17/2010 12:30	3/24/2010 15:20		METHOD BLANK
WG108079-2	SB		MTHARD-ICPMS	BLANK WTR		3/17/2010 12:30	3/24/2010 15:20		WG108079-1 MS-20
WG108079-3	LD		MTICPMS	FRESH WTR		3/17/2010 12:30	3/22/2010 13:06	WG108079-1, -2, -3, -4, -5, -6, -7, -8	L49495-1 RPD-LIQ
WG108079-4	MS		MTICPMS	FRESH WTR		3/17/2010 12:30	3/22/2010 13:12		L49495-1 MS-20
WG108079-5	LD		MTICPMS	STORM WTR		3/17/2010 12:30	3/22/2010 13:48		L49941-1 RPD-LIQ
WG108079-6	MS		MTICPMS	STORM WTR		3/17/2010 12:30	3/22/2010 13:54		L49941-1 MS-20
WG108079-7	LD		MTHARD-ICPMS	STORM WTR		3/17/2010 12:30	3/24/2010 15:20	WG108079-1, -2, -7, -8	L50389-1 RPD-LIQ
WG108079-8	MS		MTHARD-ICPMS	STORM WTR		3/17/2010 12:30	3/24/2010 15:20		L50389-1 MS-20

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Workgroup: WG108079 Total Metals

MB:WG108079-1 Matrix: BLANK WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Hardness, Calc	0.066	0.331	mg CaCO3/L	<MDL	

MB:WG108079-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Antimony, Total, ICP-MS	0.3	1	ug/L	<MDL	
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Barium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Calcium, Total, ICP-MS	10	50	ug/L	<MDL	
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	
Iron, Total, ICP-MS	10	50	ug/L	<MDL	
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Magnesium, Total, ICP-MS	10	50	ug/L	<MDL	
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	

SB:WG108079-2 MB:WG108079-1 Matrix: BLANK WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	<MDL	33.1	29.7	90		85–115

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Mercer Island Stormwater Monitoring, L50109

SB:WG108079-2 MB:WG108079-1 Matrix: BLANK WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Antimony, Total, ICP-MS	0.3	1	ug/L	<MDL	20	17.1	86		85--115
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.2	101		85--115
Barium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	17.5	88		85--115
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.4	97		85--115
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	18.2	91		85--115
Calcium, Total, ICP-MS	10	50	ug/L	<MDL	5000	4340	87		85--115
Chromium, Total, ICP-MS	0.2	1	ug/L	<MDL	20	20	100		85--115
Copper, Total, ICP-MS	0.4	2	ug/L	<MDL	20	20.7	103		85--115
Iron, Total, ICP-MS	10	50	ug/L	<MDL	5000	4930	99		85--115
Lead, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.4	92		85--115
Magnesium, Total, ICP-MS	10	50	ug/L	<MDL	5000	4570	91		85--115
Nickel, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.2	101		85--115
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	19.2	96		85--115
Silver, Total, ICP-MS	0.05	0.25	ug/L	<MDL	20	18.4	92		85--115
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	20	18.4	92		85--115
Zinc, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	19.4	97		85--115

LD:WG108079-3 L49495-1 Matrix: FRESH WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 421185
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Antimony, Total, ICP-MS	0.3	1	ug/L	1.11	1.04	6		20
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	1.97	2.01	2		20
Barium, Total, ICP-MS	0.05	0.25	ug/L	29.1	28.3	3		20
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	0.32	0.301	6		20
Chromium, Total, ICP-MS	0.2	1	ug/L	4.55	4.15	9		20
Copper, Total, ICP-MS	0.4	2	ug/L	51.8	54	4		20
Lead, Total, ICP-MS	0.1	0.5	ug/L	16.7	16.3	2		20
Nickel, Total, ICP-MS	0.1	0.5	ug/L	3.92	3.94	0		20
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20
Silver, Total, ICP-MS	0.05	0.25	ug/L	0.355	0.37	4		20
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	<MDL			20
Zinc, Total, ICP-MS	0.5	2.5	ug/L	123	119	3		20

MS:WG108079-4 L49495-1 Matrix: FRESH WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 421185
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Antimony, Total, ICP-MS	0.3	1	ug/L	1.11	20	17.8	83		75--125
Arsenic, Total, ICP-MS	0.1	0.5	ug/L	1.97	20	20.2	91		75--125
Barium, Total, ICP-MS	0.05	0.25	ug/L	29.1	20	45.4	81		75--125
Beryllium, Total, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.9	95		75--125
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	0.32	20	18.6	91		75--125
Chromium, Total, ICP-MS	0.2	1	ug/L	4.55	20	23.1	93		75--125
Copper, Total, ICP-MS	0.4	2	ug/L	51.8	20	72.3	103		75--125
Lead, Total, ICP-MS	0.1	0.5	ug/L	16.7	20	34.8	90		75--125
Nickel, Total, ICP-MS	0.1	0.5	ug/L	3.92	20	22.8	94		75--125
Selenium, Total, ICP-MS	0.5	2.5	ug/L	<MDL	20	19.1	96		75--125
Silver, Total, ICP-MS	0.05	0.25	ug/L	0.355	20	16.3	80		75--125
Thallium, Total, ICP-MS	0.04	0.2	ug/L	<MDL	20	18.5	92		75--125
Zinc, Total, ICP-MS	0.5	2.5	ug/L	123	20	138			(No MS/MSD %Rec. due to 4x rule)

LD:WG108079-5 L49941-1 Matrix: STORM WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 421185
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Iron, Total, ICP-MS	10	50	ug/L	614	607	1		20

MS:WG108079-6 L49941-1 Matrix: STORM WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 421185
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Iron, Total, ICP-MS	10	50	ug/L	614	5000	5320	94		75--125

LD:WG108079-7 L50389-1 Matrix: STORM WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 421879-210
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	96	94.2	2		20

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LD:WG108079-7 L50389-1 Matrix: STORM WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 421879-210
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	0.18	0.19			20
Calcium, Total, ICP-MS	10	50	ug/L	33200	32500	2		20
Copper, Total, ICP-MS	0.4	2	ug/L	15	15	0		20
Lead, Total, ICP-MS	0.1	0.5	ug/L	14.8	14.8	0		20
Magnesium, Total, ICP-MS	10	50	ug/L	3210	3180	1		20
Zinc, Total, ICP-MS	0.5	2.5	ug/L	69	69.1	0		20

MS:WG108079-8 L50389-1 Matrix: STORM WTR Listtype: MTHARD-ICPMS Method: EPA 200.8/SW846 6020A*SM2340B Project: 421879-210
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Hardness, Calc	0.066	0.331	mg CaCO3/L	96	33.1	127	92		75--125

MS:WG108079-8 L50389-1 Matrix: STORM WTR Listtype: MTICPMS Method: EPA 200.8*SW846 6020A Project: 421879-210
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Cadmium, Total, ICP-MS	0.05	0.25	ug/L	0.18	20	18.3	90		75--125
Calcium, Total, ICP-MS	10	50	ug/L	33200	5000	37800			(No MS/MSD %Rec. due to 4x rule)
Copper, Total, ICP-MS	0.4	2	ug/L	15	20	32.9	90		75--125
Lead, Total, ICP-MS	0.1	0.5	ug/L	14.8	20	33.4	93		75--125
Magnesium, Total, ICP-MS	10	50	ug/L	3210	5000	7810	92		75--125
Zinc, Total, ICP-MS	0.5	2.5	ug/L	69	20	87.5	93		75--125

WG108153 Dissolved Metals

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L50164-3	421422-HTGW	SWD-HTGW Houghton Groundwater Quarterly	MTICPMS-DISS	GRND WTR	3/16/2010 7:30	3/22/2010 12:00	3/23/2010 15:02	WG108153-1, -2, -3, -4	
L50333-3	421422-HTGW		MTICPMS-DISS	GRND WTR	3/16/2010 8:10	3/22/2010 12:00	3/23/2010 15:08		
L50335-1	421422-HTGW		MTICPMS-DISS	GRND WTR	3/16/2010 7:10	3/22/2010 12:00	3/23/2010 15:26		
L50335-3	421422-HTGW		MTICPMS-DISS	GRND WTR	3/17/2010 7:45	3/22/2010 12:00	3/23/2010 15:32		
L50335-4	421422-HTGW		MTICPMS-DISS	GRND WTR	3/17/2010 6:35	3/22/2010 12:00	3/23/2010 15:38		
L50362-1	421422-HTGW		MTICPMS-DISS	GRND WTR	3/16/2010 9:00	3/22/2010 12:00	3/23/2010 15:44		
L50362-3	421422-HTGW		MTICPMS-DISS	GRND WTR	3/16/2010 9:50	3/22/2010 12:00	3/23/2010 15:50		
L50362-4	421422-HTGW		MTICPMS-DISS	GRND WTR	3/16/2010 9:00	3/22/2010 12:00	3/23/2010 15:56		
L50365-1	421422-PUGW	SWD-PUGW Puyallup Groundwater Quarterly	MTICPMS-DISS	GRND WTR	3/18/2010 7:40	3/22/2010 12:00	3/23/2010 16:02		
L50365-3	421422-PUGW		MTICPMS-DISS	GRND WTR	3/18/2010 8:35	3/22/2010 12:00	3/23/2010 16:20		
L50365-4	421422-PUGW		MTICPMS-DISS	GRND WTR	3/18/2010 9:20	3/22/2010 12:00	3/23/2010 16:39		
L50442-1	421422-HTGW	SWD-HTGW Houghton Groundwater Quarterly	MTICPMS-DISS	GRND WTR	3/17/2010 8:35	3/22/2010 12:00	3/23/2010 16:45		
L50442-3	421422-HTGW		MTICPMS-DISS	GRND WTR	3/17/2010 8:10	3/22/2010 12:00	3/23/2010 16:51		
L49872-7	421240-210	Wet Weather Survey(Strmwtr)	MTICPMS-DISS	STORM WTR	3/11/2010 14:00	3/22/2010 12:00	3/23/2010 14:25		
L49872-8	421240-210		MTICPMS-DISS	STORM WTR	3/11/2010 14:30	3/22/2010 12:00	3/23/2010 14:31		
L49872-9	421240-210		MTICPMS-DISS	FILTER WTR	3/11/2010 10:41	3/22/2010 12:00	3/23/2010 14:37		
L50109-2	421195-180	Mercer Island Stormwater Monitoring	MTICPMS-DISS	STORM WTR	3/11/2010 13:00	3/22/2010 12:00	3/23/2010 14:43		
L50109-4	421195-180		MTICPMS-DISS	STORM WTR	3/11/2010 11:40	3/22/2010 12:00	3/23/2010 14:49		
L50109-6	421195-180		MTICPMS-DISS	FILTER WTR	3/11/2010 11:10	3/22/2010 12:00	3/23/2010 14:55		FFBLK-Metals
WG108153-1	MB		MTICPMS-DISS	BLANK WTR		3/22/2010 12:00	3/23/2010 14:13		METHOD BLANK
WG108153-2	SB		MTICPMS-DISS	BLANK WTR		3/22/2010 12:00	3/23/2010 14:19		WG108153-1 MS-20 SPIKE BLANK
WG108153-3	LD		MTICPMS-DISS	GRND WTR		3/22/2010 12:00	3/23/2010 16:08		L50365-1 RPD-LIQ LAB DUPLICATE
WG108153-4	MS		MTICPMS-DISS	GRND WTR		3/22/2010 12:00	3/23/2010 16:14		L50365-1 MS-20 MATRIX SPIKE

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Workgroup: WG108153 Dissolved Metals

MB:WG108153-1 Matrix: BLANK WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	
Potassium, Dissolved, ICP-MS	100	500	ug/L	<MDL	
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	
Sodium, Dissolved, ICP-MS	20	100	ug/L	<MDL	
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	

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Mercer Island Stormwater Monitoring, L50109

SB:WG108153-2 MB:WG108153-1 Matrix: BLANK WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	20	20.1	100		85--115
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.3	97		85--115
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19.7	98		85--115
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	22.4	112		85--115
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	20.8	104		85--115
Calcium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4870	97		85--115
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	20	19.3	97		85--115
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	19	95		85--115
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	20	20.2	101		85--115
Iron, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	4710	94		85--115
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.2	96		85--115
Magnesium, Dissolved, ICP-MS	10	50	ug/L	<MDL	5000	5460	109		85--115
Manganese, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	17.7	89		85--115
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	19.4	97		85--115
Potassium, Dissolved, ICP-MS	100	500	ug/L	<MDL	5000	4750	95		85--115
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	20	100		85--115
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	21.2	106		85--115
Sodium, Dissolved, ICP-MS	20	100	ug/L	<MDL	5000	5350	107		85--115
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	20	18.9	94		85--115
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	<MDL	20	18.9	94		85--115
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	19.4	97		85--115

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L50109

LD:WG108153-3 L50365-1 Matrix: GRND WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421422-PUGW
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	<MDL			20
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	7.19	7.16	1		20
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	10.3	10.3	0		20
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	0.056	0.055			20
Calcium, Dissolved, ICP-MS	10	50	ug/L	32200	33000	3		20
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	<MDL			20
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	0.24	0.24			20
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	<MDL			20
Iron, Dissolved, ICP-MS	10	50	ug/L	66.4	65.1	2		20
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	<MDL			20
Magnesium, Dissolved, ICP-MS	10	50	ug/L	18200	20000	9		20
Manganese, Dissolved, ICP-MS	0.2	1	ug/L	639	610	5		20
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	0.951	0.944	1		20
Potassium, Dissolved, ICP-MS	100	500	ug/L	1940	1940	0		20
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	<MDL			20
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	<MDL			20
Sodium, Dissolved, ICP-MS	20	100	ug/L	18400	20500	11		20
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	<MDL			20
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	0.36	0.36			20
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	0.65	0.52			20

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring, L50109

MS:WG108153-4 L50365-1 Matrix: GRND WTR Listtype: MTICPMS-DISS Method: EPA 200.8*SW846 6020A Project: 421422-PUGW
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Antimony, Dissolved, ICP-MS	0.3	1	ug/L	<MDL	20	19.4	97		75--125
Arsenic, Dissolved, ICP-MS	0.1	0.5	ug/L	7.19	20	26.4	96		75--125
Barium, Dissolved, ICP-MS	0.05	0.25	ug/L	10.3	20	29.2	95		75--125
Beryllium, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	20.2	101		75--125
Cadmium, Dissolved, ICP-MS	0.05	0.25	ug/L	0.056	20	19.6	98		75--125
Calcium, Dissolved, ICP-MS	10	50	ug/L	32200	5000	37500			(No MS/MSD %Rec. due to 4x rule)
Chromium, Dissolved, ICP-MS	0.2	1	ug/L	<MDL	20	18.8	94		75--125
Cobalt, Dissolved, ICP-MS	0.05	0.25	ug/L	0.24	20	17.2	85		75--125
Copper, Dissolved, ICP-MS	0.4	2	ug/L	<MDL	20	19.4	97		75--125
Iron, Dissolved, ICP-MS	10	50	ug/L	66.4	5000	4760	94		75--125
Lead, Dissolved, ICP-MS	0.1	0.5	ug/L	<MDL	20	18.7	93		75--125
Magnesium, Dissolved, ICP-MS	10	50	ug/L	18200	5000	23200	98		75--125
Manganese, Dissolved, ICP-MS	0.2	1	ug/L	639	20	667			(No MS/MSD %Rec. due to 4x rule)
Nickel, Dissolved, ICP-MS	0.1	0.5	ug/L	0.951	20	19.3	92		75--125
Potassium, Dissolved, ICP-MS	100	500	ug/L	1940	5000	6480	91		75--125
Selenium, Dissolved, ICP-MS	0.5	2.5	ug/L	<MDL	20	20.4	102		75--125
Silver, Dissolved, ICP-MS	0.05	0.25	ug/L	<MDL	20	18.1	91		75--125
Sodium, Dissolved, ICP-MS	20	100	ug/L	18400	5000	22900	90		75--125
Thallium, Dissolved, ICP-MS	0.04	0.2	ug/L	<MDL	20	18.5	93		75--125
Vanadium, Dissolved, ICP-MS	0.075	0.375	ug/L	0.36	20	18.8	92		75--125
Zinc, Dissolved, ICP-MS	0.5	2.5	ug/L	0.65	20	20.5	99		75--125

King County

Water and Land Resources Division
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Department of Natural Resources and Parks
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July 12, 2010

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180
Mercer Island Stormwater Monitoring, Baseflow Event
Samples L50993-1 to 5, collected June 9, 2010

Attached is the comprehensive report for the water samples collected and delivered to the laboratory on June 9, 2010. The samples were analyzed in the Trace Organics, Microbiology and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:

There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:

There were no anomalies associated with the preparation and the analysis of these samples.

Organics:

There were no anomalies associated with the preparation and the analysis of these samples.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

King County Environmental Lab Analytical Report

Project:	421195-180	421195-180	421195-180
Locator:	MERCERISL06	MERCERISL10	MERCERISL26
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	FOREST AVE. AND 84
Sample:	L50993-1	L50993-2	L50993-3
Matrix:	LK FRESH WTR	LK FRESH WTR	LK FRESH WTR
ColDate:	6/9/10 12:07	6/9/10 12:32	6/9/10 10:32
TimeSpan:			
TotalSolid:			
ClientLoc:			
SampDepth:			
	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
CV SM2540-D															
Total Suspended Solids	11.2		0.5	1	mg/L	5.6		0.5	1	mg/L	8.35		0.5	1	mg/L
ES NONE															
Conductivity, Field	189		0.5	10	umhos/cm	138		0.5	10	umhos/cm	209		0.5	10	umhos/cm
Discharge Rate of Stream	0.5		0.05	0.1	cfs	0.9		0.05	0.1	cfs	0.2		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	96				%	90.4				%	90.5				%
Dissolved Oxygen, Field	10		0.5	1	mg/L	9		0.5	1	mg/L	9.5		0.5	1	mg/L
Field Personnel	JP				none	JP				none	JP				none
pH, Field	7.82				pH	7.41				pH	7.71				pH
Sample Temperature, Field	13.1				deg C	15				deg C	12.8				deg C
Turbidity, Field	6.4		0.5	2	NTU	11.5		0.5	2	NTU	8.4		0.5	2	NTU
MC SM 9222D 20TH															
Fecal Coliform	870				CFU/100ml	1500				CFU/100ml	260				CFU/100ml
OR SW-846 8151A GCMS MODIFIED															
2,4,5-T		<MDL	0.5	1	ug/L		<MDL	0.52	1.03	ug/L		<MDL	0.49	0.98	ug/L
2,4,5-TP (Silvex)		<MDL	0.5	1	ug/L		<MDL	0.52	1.03	ug/L		<MDL	0.49	0.98	ug/L
2,4-D		<MDL	0.5	1	ug/L		<MDL	0.52	1.03	ug/L		<MDL	0.49	0.98	ug/L
2,4-DB		<MDL	0.5	1	ug/L		<MDL	0.52	1.03	ug/L		<MDL	0.49	0.98	ug/L
Dichloroprop		<MDL	0.5	1	ug/L		<MDL	0.52	1.03	ug/L		<MDL	0.49	0.98	ug/L
Dinoseb		<MDL	0.5	1	ug/L		<MDL	0.52	1.03	ug/L		<MDL	0.49	0.98	ug/L
MCPA		<MDL	0.5	1	ug/L		<MDL	0.52	1.03	ug/L		<MDL	0.49	0.98	ug/L
MCPP		<MDL	0.5	1	ug/L		<MDL	0.52	1.03	ug/L		<MDL	0.49	0.98	ug/L
MCPP		<MDL	0.5	1	ug/L		<MDL	0.52	1.03	ug/L		<MDL	0.49	0.98	ug/L

King County Environmental Lab Analytical Report

Project:	421195-180	Project:	421195-180
Locator:	MERCERISL32	Locator:	MERCERISL42
Descrip:	CREEK NEAR HOLLYHI	Descrip:	E. MERCER WAY
Sample:	L50993-4	Sample:	L50993-5
Matrix:	LK FRESH WTR	Matrix:	LK FRESH WTR
ColDate:	6/9/10 10:55	ColDate:	6/9/10 11:25
TimeSpan:		TimeSpan:	
TotalSolid:		TotalSolid:	
ClientLoc:		ClientLoc:	
SampDepth:		SampDepth:	
WET Weight Basis		**WET Weight Basis**	

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
CV SM2540-D										
Total Suspended Solids	26.5		0.5	1	mg/L	24.2		1	2	mg/L
ES NONE										
Conductivity, Field	116		0.5	10	umhos/cm	179		0.5	10	umhos/cm
Discharge Rate of Stream	1.5		0.05	0.1	cfs	0.5		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	95.5				%	90.4				%
Dissolved Oxygen, Field	9.6		0.5	1	mg/L	9.6		0.5	1	mg/L
Field Personnel	JP				none	JP				none
pH, Field	7.65				pH	7.61				pH
Sample Temperature, Field	14.7				deg C	12.2				deg C
Turbidity, Field	17.6		0.5	2	NTU	19.5		0.5	2	NTU
MC SM 9222D 20TH										
Fecal Coliform	840				CFU/100ml	530				CFU/100ml
OR SW-846 8151A GCMS MODIFIED										
2,4,5-T		<MDL	0.48	0.962	ug/L		<MDL	0.49	0.98	ug/L
2,4,5-TP (Silvex)		<MDL	0.48	0.962	ug/L		<MDL	0.49	0.98	ug/L
2,4-D	0.53	<RDL	0.48	0.962	ug/L		<MDL	0.49	0.98	ug/L
2,4-DB		<MDL	0.48	0.962	ug/L		<MDL	0.49	0.98	ug/L
Dichloroprop		<MDL	0.48	0.962	ug/L		<MDL	0.49	0.98	ug/L
Dinoseb		<MDL	0.48	0.962	ug/L		<MDL	0.49	0.98	ug/L
MCPA		<MDL	0.48	0.962	ug/L		<MDL	0.49	0.98	ug/L
MCPP		<MDL	0.48	0.962	ug/L		<MDL	0.49	0.98	ug/L
MCPP		<MDL	0.48	0.962	ug/L		<MDL	0.49	0.98	ug/L

King County Environmental Lab Analytical MATRIX Report

Owner: SEEDPAK
Matrix Class: LIQUID
User select: WET Weight Basis

			Total Suspended Solids	Conductivity, Field	Discharge Rate of Stream	Dissolved Oxygen Saturation, Field	Dissolved Oxygen, Field	Field Personnel	Sample Temperature, Field	Turbidity, Field	pH, Field	Fecal Coliform	2,4-D
LOCATOR	**PROJECT**	**SAMPLE**	**mg/L**	**umhos/cm**	**cfs**	**%**	**mg/L**	**none**	**deg C**	**NTU**	**pH**	**CFU/100ml**	**ug/L**
MERCERISL06	421195-180	L50993-1	11.2	189	0.5	96	10		13.1	6.4	7.82	870	
MERCERISL10	421195-180	L50993-2	5.6	138	0.9	90.4	9		15	11.5	7.41	1500	
MERCERISL26	421195-180	L50993-3	8.35	209	0.2	90.5	9.5		12.8	8.4	7.71	260	
MERCERISL32	421195-180	L50993-4	26.5	116	1.5	95.5	9.6		14.7	17.6	7.65	840	0.53
MERCERISL42	421195-180	L50993-5	24.2	179	0.5	90.4	9.6		12.2	19.5	7.61	530	
* Not converted to dry weight basis													

King County Environmental Lab Analytical Text Value Report

Project	Sample	Parameter	Textvalue
421195-180	L50993-1	Field Personnel	JP
421195-180	L50993-2	Field Personnel	JP
421195-180	L50993-3	Field Personnel	JP
421195-180	L50993-4	Field Personnel	JP
421195-180	L50993-5	Field Personnel	JP

Login: P50993

MERCER ISLAND BASEFLOW SAMPLING

Personnel: J. Power

Project: 421195-180

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
Jean Power	6/9/2010	1320
RECEIVED BY	Date	Time
[illegible]	6-9-10	1320
Sample Number(s) L50993 1-5		(All)

SAMPLENUM	P50993-1	P50993-2	P50993-3
QC LINK			
LOCATOR	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	T_KC_MERCERBASE-3
Locator Desc	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	FOREST AVE. AND 84TH AVE SE
SITE	KING COUNTY	KING COUNTY	KING COUNTY
COMMENTS	baseline micro	baseline micro	baseline micro
Start Date/Time	9-JUN-10/1207	9-JUN-10/1232	9-JUN-10/1032
End Date/Time			
Time Span			
Sample Depth			
COND, FIELD	188.5	137.5	209.3
DO SAT, FIELD	96.0	90.4	90.5
DO, FIELD	10.03	9.03	9.51
PERSONNEL	JP	JP	JP
PH, FIELD	7.82	7.41	7.71
SAMP TEMP	13.09	15.03	12.78
STRM FLOW	0.5 CFS	0.9 CFS	0.2 CFS SWOFF BZ
TURB, FIELD	~~8.3~~ 6.44	11.5	8.38
Dept. Matrix Prod	3 LK TSS 5 LK FC-MF 7 LK HERB	3 LK TSS 5 LK FC-MF 7 LK HERB	3 LK TSS 5 LK FC-MF 7 LK HERB

6/22/10
WG 109831
R 146075

Login: P50993

MERCER ISLAND BASEFLOW SAMPLING

Personnel: JP

Project: 421195-180

SAMPLENUM	P50993-4		P50993-5	
QC LINK				
LOCATOR	MERCERISL32		MERCERISL42	
Short Loc. Desc.	T_KC_MERCERBASE-4		T_KC_MERCERBASE-5	
Locator Desc	CREEK NEAR HOLLYHILL DRIVE AND W. MERCER		E. MERCER WAY	
SITE	KING COUNTY		KING COUNTY	
COMMENTS	baseline micro		baseline micro	
Start Date/Time	9-JUN-10/ 1055 1100		9-JUN-10/ 1125	
End Date/Time				
Time Span				
Sample Depth	SAMP	FREP		
COND, FIELD	115.7	115.7	179.0	
DO SAT, FIELD	95.5	95.2	90.4	
DO, FIELD	9.61	9.57	9.63	
PERSONNEL	JP		JP	
PH, FIELD	7.65	7.64	7.61	
SAMP TEMP	14.68	14.72	12.18	
STRM FLOW	1.5 CFS		0.5 CFS	
TURB, FIELD	17.6	13.9	19.5	
Dept. Matrix Prod	3 LK TSS 5 LK FC-MF 7 LK HERB		3 LK TSS 5 LK FC-MF 7 LK HERB	

UP + TURBID, BUT STARTING TO GO BACK DOWN WHILE I WAS SAMPLING

WG109658 TSS

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L50836-3	421422-DUGW	SWD-DUGW Duvall Groundwater Quarterly	CVTSS	GRND WTR	6/8/2010 10:10	6/11/2010 9:00	6/14/2010 14:11	WG109658-1, -2, -3, -4, -5, -6, -7, -8, -9, -10	
L50947-3	421422-DUGW		CVTSS	GRND WTR	6/7/2010 10:05	6/11/2010 9:00	6/14/2010 14:12		
L50952-1	421422-DUGW		CVTSS	GRND WTR	6/8/2010 8:40	6/11/2010 9:00	6/14/2010 14:13		
L50952-3	421422-DUGW		CVTSS	GRND WTR	6/9/2010 6:20	6/11/2010 9:00	6/14/2010 14:16		
L50952-4	421422-DUGW		CVTSS	GRND WTR	6/10/2010 9:00	6/11/2010 9:00	6/14/2010 14:17		
L50953-1	421422-DUGW		CVTSS	GRND WTR	6/9/2010 7:40	6/11/2010 9:00	6/14/2010 14:18		
L50953-3	421422-DUGW		CVTSS	GRND WTR	6/9/2010 8:45	6/11/2010 9:00	6/14/2010 14:19		
L50953-4	421422-DUGW		CVTSS	GRND WTR	6/9/2010 8:30	6/11/2010 9:00	6/14/2010 14:20		
L50957-1	421422-DUGW		CVTSS	GRND WTR	6/9/2010 9:45	6/11/2010 9:00	6/14/2010 14:20		
L50957-3	421422-DUGW		CVTSS	GRND WTR	6/10/2010 6:05	6/11/2010 9:00	6/14/2010 14:21		
L50959-1	421422-DUGW		CVTSS	GRND WTR	6/10/2010 7:40	6/11/2010 9:00	6/14/2010 14:23		
L50963-1	421422-CHSW-P2	SWD-CHSW P - 2 Cedar Hills Surface Water Permit 2	CVTSS	FRESH WTR	6/10/2010 7:20	6/11/2010 9:00	6/14/2010 14:06		
L50963-2	421422-CHSW-P2		CVTSS	FRESH WTR	6/10/2010 7:45	6/11/2010 9:00	6/14/2010 14:07		
L50963-3	421422-CHSW-P2		CVTSS	FRESH WTR	6/10/2010 8:00	6/11/2010 9:00	6/14/2010 14:08		
L50978-2	421422-CHSW-M	SWD-CHSW M Cedar Hills Surface Water Monthly	CVTSS	FRESH WTR	6/10/2010 9:10	6/11/2010 9:00	6/14/2010 14:09		
L50995-8	421422-CHSW-M		CVTSS	FRESH WTR	6/10/2010 8:40	6/11/2010 9:00	6/14/2010 14:10		
L50908-1	421195-110	Cottage Lake	CVTSS	FRESH WTR	6/9/2010 11:25	6/11/2010 9:00	6/14/2010 14:31		
L50908-2	421195-110		CVTSS	FRESH WTR	6/9/2010 10:25	6/11/2010 9:00	6/14/2010 14:33		
L50908-3	421195-110		CVTSS	FRESH WTR	6/9/2010 10:45	6/11/2010 9:00	6/14/2010 14:34		
L50908-4	421195-110		CVTSS	FRESH WTR	6/9/2010 10:55	6/11/2010 9:00	6/14/2010 14:35		
L50908-5	421195-110		CVTSS	FRESH WTR	6/9/2010 10:35	6/11/2010 9:00	6/14/2010 14:36		
L50908-6	421195-110		CVTSS	FRESH WTR	6/9/2010 11:15	6/11/2010 9:00	6/14/2010 14:38		
L50908-7	421195-110		CVTSS	FRESH WTR	6/9/2010 11:10	6/11/2010 9:00	6/14/2010 14:38		
L50908-8	421195-110		CVTSS	FRESH WTR	6/9/2010 9:36	6/11/2010 9:00	6/14/2010 14:41		
L50908-9	421195-110		CVTSS	FRESH WTR	6/9/2010 9:36	6/11/2010 9:00	6/14/2010 14:42		
L50908-10	421195-110		CVTSS	FRESH WTR	6/9/2010 9:36	6/11/2010 9:00	6/14/2010 14:43		
L50908-11	421195-110		CVTSS	FRESH WTR	6/9/2010 9:55	6/11/2010 9:00	6/14/2010 14:44		
L50972-1	421195-190	Vashon Island Surface Water	CVTSS	FRESH WTR	6/9/2010 10:17	6/11/2010 9:00	6/14/2010 14:24		
L50972-2	421195-190		CVTSS	FRESH WTR	6/9/2010 7:49	6/11/2010 9:00	6/14/2010 14:25		
L50972-3	421195-190		CVTSS	FRESH WTR	6/9/2010 8:08	6/11/2010 9:00	6/14/2010 14:26		
L50972-4	421195-190		CVTSS	FRESH WTR	6/9/2010 9:37	6/11/2010 9:00	6/14/2010 14:28		
L50993-1	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	6/9/2010 12:07	6/11/2010 9:00	6/14/2010 14:45		
L50993-2	421195-180		CVTSS	FRESH WTR	6/9/2010 12:32	6/11/2010 9:00	6/14/2010 14:45		
L50993-3	421195-180		CVTSS	FRESH WTR	6/9/2010 10:32	6/11/2010 9:00	6/14/2010 14:46		
L50993-4	421195-180		CVTSS	FRESH WTR	6/9/2010 10:55	6/11/2010 9:00	6/14/2010 14:47		
L50993-5	421195-180		CVTSS	FRESH WTR	6/9/2010 11:25	6/11/2010 9:00	6/14/2010 14:47		
L51028-1	421879-220	NPDES SW Sammamish	CVTSS	STORM WTR	6/10/2010 0:31	6/11/2010 9:00	6/14/2010 14:49		
L51028-2	421879-220		CVTSS	STORM WTR	6/10/2010 0:14	6/11/2010 9:00	6/14/2010 14:50		
L51028-3	421879-220		CVTSS	STORM WTR	6/10/2010 0:20	6/11/2010 9:00	6/14/2010 14:51		

L51028-4	421879-220		CVTSS	STORM WTR	6/10/2010 3:41	6/11/2010 9:00	6/14/2010 14:53		
WG109658-1	MB		CVTSS	BLANK WTR		6/11/2010 9:00	6/14/2010 14:03		MB1 100611 09:00
WG109658-2	LCS		CVTSS	BLANK WTR		6/11/2010 9:00	6/14/2010 14:04		LEVEL1
WG109658-3	LD		CVTSS	FRESH WTR		6/11/2010 9:00	6/14/2010 14:07		L50963-2
WG109658-4	LD		CVTSS	GRND WTR		6/11/2010 9:00	6/14/2010 14:14		L50952-1
WG109658-5	LD		CVTSS	FRESH WTR		6/11/2010 9:00	6/14/2010 14:27		L50972-3
WG109658-6	MB		CVTSS	BLANK WTR		6/11/2010 9:00	6/14/2010 14:29		MB2 100611 09:00
WG109658-7	LCS		CVTSS	BLANK WTR		6/11/2010 9:00	6/14/2010 14:30		LEVEL1
WG109658-8	LD		CVTSS	FRESH WTR		6/11/2010 9:00	6/14/2010 14:32		L50908-1
WG109658-9	LD		CVTSS	FRESH WTR		6/11/2010 9:00	6/14/2010 14:49		L50993-5
WG109658-10	LD		CVTSS	STORM WTR		6/11/2010 9:00	6/14/2010 14:52		L51028-3

WG109831 Field Parameters

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L50993-1	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	FRESH WTR	6/9/2010 12:07			WG109831-1, -2, -3, -4	
L50993-1	421195-180		ESS	FRESH WTR	6/9/2010 12:07				
L50993-2	421195-180		ESS-FIELDMETER	FRESH WTR	6/9/2010 12:32				
L50993-2	421195-180		ESS	FRESH WTR	6/9/2010 12:32				
L50993-3	421195-180		ESS-FIELDMETER	FRESH WTR	6/9/2010 10:32				
L50993-3	421195-180		ESS	FRESH WTR	6/9/2010 10:32				
L50993-4	421195-180		ESS-FIELDMETER	FRESH WTR	6/9/2010 10:55				
L50993-4	421195-180		ESS	FRESH WTR	6/9/2010 10:55				
L50993-5	421195-180		ESS-FIELDMETER	FRESH WTR	6/9/2010 11:25				
L50993-5	421195-180		ESS	FRESH WTR	6/9/2010 11:25				
WG109831-1	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG109831-2	FREP		ESS-FIELDMETER	FRESH WTR					L50993-4 RANGE1
WG109831-3	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG109831-4	CS		ESS-FIELDMETER	BLANK WTR					RANGE1

King County Environmental Lab Batch Report

Mercer Island SW Monitoring, Baseflow, L50993

WG109590 Fecal coliform

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L50993-1	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	6/9/2010 12:07	6/9/2010 14:40	6/10/2010 13:30	WG109593-1, -2, -3, -4, WG109590-1	
L50993-2	421195-180		MCFC-MF	FRESH WTR	6/9/2010 12:32	6/9/2010 14:40	6/10/2010 13:30		
L50993-3	421195-180		MCFC-MF	FRESH WTR	6/9/2010 10:32	6/9/2010 14:40	6/10/2010 13:30		
L50993-4	421195-180		MCFC-MF	FRESH WTR	6/9/2010 10:55	6/9/2010 14:40	6/10/2010 13:30		
L50993-5	421195-180		MCFC-MF	FRESH WTR	6/9/2010 11:25	6/9/2010 14:40	6/10/2010 13:30		
WG109590-1	LD		MCFC-MF	FRESH WTR		6/9/2010 14:40	6/10/2010 13:30		L50993-2
WG109593-1	PC		MCFC-MF	BLANK WTR		6/9/2010 14:40	6/10/2010 13:30		QC-PERFORMED:09-JUN-10
WG109593-2	NC		MCFC-MF	BLANK WTR		6/9/2010 14:40	6/10/2010 13:30		QC-PERFORMED:09-JUN-10
WG109593-3	BF		MCFC-MF	BLANK WTR		6/9/2010 14:40	6/10/2010 13:30		QC-PERFORMED:09-JUN-10
WG109593-4	AF		MCFC-MF	BLANK WTR		6/9/2010 14:40	6/10/2010 13:30		QC-PERFORMED:09-JUN-10

WG109660 Herbicides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L50993-1	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	6/9/2010 12:07	6/14/2010 6:00	6/23/2010 22:30	WG109660-5, -1, -2, -3, -4	
L50993-2	421195-180		ORHERB	FRESH WTR	6/9/2010 12:32	6/14/2010 6:00	6/23/2010 22:59		
L50993-3	421195-180		ORHERB	FRESH WTR	6/9/2010 10:32	6/14/2010 6:00	6/23/2010 23:29		
L50993-4	421195-180		ORHERB	FRESH WTR	6/9/2010 10:55	6/14/2010 6:00	6/23/2010 23:58		
L50993-5	421195-180		ORHERB	FRESH WTR	6/9/2010 11:25	6/14/2010 6:00	6/24/2010 0:28		
WG109660-1	MB		ORHERB	BLANK WTR		6/14/2010 6:00	6/23/2010 20:05		MB100614
WG109660-2	SB		ORHERB	BLANK WTR		6/14/2010 6:00	6/23/2010 20:34		WG109660-1
WG109660-3	SBD		ORHERB	BLANK WTR		6/14/2010 6:00	6/23/2010 21:03		WG109660-2
WG109660-4	MS		ORHERB	FRESH WTR		6/14/2010 6:00	6/23/2010 21:32		WG109660-1 L50993-4
WG109660-5	MSD		ORHERB	FRESH WTR		6/14/2010 6:00	6/23/2010 22:01		WG109660-4 L50993-4

King County Environmental Laboratory Analytical QC Report

Mercer Island SW Monitoring, Baseflow, L50993

Workgroup: WG109658 TSS

MB:WG109658-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG109658-2 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	96	96		80--120

LD:WG109658-3 L50963-2 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421422-CHSW-P2
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	2.2	4.4	mg/L	158	158	0		25

LD:WG109658-4 L50952-1 Matrix: GRND WTR Listtype: CVTSS Method: SM2540-D Project: 421422-DUGW
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	<MDL	<MDL			25

LD:WG109658-5 L50972-3 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-190
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	20.8	21	1		25

MB:WG109658-6 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG109658-7 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	97	97		80--120

LD:WG109658-8 L50908-1 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-110
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	0.5	1.1	mg/L	10	9.89	1		25

LD:WG109658-9 L50993-5 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	24.2	24.2	0		25

LD:WG109658-10 L51028-3 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421879-220
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	2.6	2.6	0		25

Workgroup: WG109831 Field Parameters

CS:WG109831-1 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73	99		90--110
pH, Field			pH	6.86	6.85	0.01		0--.2

FREP:WG109831-2 L50993-4 Matrix: FRESH WTR Listtype: ESS-FIELDMETER Method: NONE Project: 421195-180
(Field Replicate)

Parameter	MDL	RDL	Units	SAMP Value	REP Value	RPD^	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	116	116	0		10
Dissolved Oxygen, Field	0.5	1	mg/L	9.6	9.6	0		20
Sample Temperature, Field			deg C	14.7	14.7	0.04		0.3
pH, Field			pH	7.65	7.64	0.01		0.2

CS:WG109831-3 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73	99		90--110
pH, Field			pH	6.86	6.92	0.06		0--.2

CS:WG109831-4 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73	99		90--110
Dissolved Oxygen Saturation, Field			%	100	101.3	101		96--104
pH, Field			pH	6.86	6.88	0.02		0--.2

Workgroup: WG109590 Fecal coliform

LD:WG109590-1 L50993-2 Matrix: FRESH WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	Rlog	P value	Qual
Fecal Coliform			CFU/100ml	1500	1300	0.06	0.51	N4

PC:WG109593-1 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG109593-2 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG109593-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG109593-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project:
(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

Workgroup: WG109660 Herbicides

MB:WG109660-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: NONE
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
2,4,5-T	0.5	1	ug/L	<MDL	
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	
2,4-D	0.5	1	ug/L	<MDL	
2,4-DB	0.5	1	ug/L	<MDL	
Dichloroprop	0.5	1	ug/L	<MDL	
Dinoseb	0.5	1	ug/L	<MDL	
MCPA	0.5	1	ug/L	<MDL	
MCPP	0.5	1	ug/L	<MDL	

SBD:WG109660-3 SB:WG109660-2 MB:WG109660-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: NONE
(Spiked Blank Duplicate, Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit	True Value	BD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2,4,5-T	0.5	1	ug/L	<MDL	5	5.67	113		10--200	5	6.64	133		16		40
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	5	5.97	119		10--200	5	6.03	121		2		40
2,4-D	0.5	1	ug/L	<MDL	5	6.47	129		10--200	5	6.94	139		7		40
2,4-DB	0.5	1	ug/L	<MDL	5	5.8	116		10--200	5	6.01	120		3		40
Dichloroprop	0.5	1	ug/L	<MDL	5	5.12	102		10--200	5	5.23	105		3		40
Dinoseb	0.5	1	ug/L	<MDL	5	3.39	68		10--200	5	4.9	98		36		40
MCPA	0.5	1	ug/L	<MDL	5	5.03	101		10--200	5	5.23	105		4		40
MCPP	0.5	1	ug/L	<MDL	5	5.19	104		10--200	5	5.03	101		3		40

King County Environmental Laboratory Analytical QC Report

Mercer Island SW Monitoring, Baseflow, L50993

MSD:WG109660-5 MS:WG109660-4 L50993-4 Matrix: FRESH WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 421195-180
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2,4,5-T	0.48	0.962	ug/L	<MDL	4.71	5.76	122		10--200	4.62	5.67	123		1		40
2,4,5-TP (Silvex)	0.48	0.962	ug/L	<MDL	4.71	5.67	120		10--200	4.62	5.81	126		5		40
2,4-D	0.48	0.962	ug/L	0.53	4.71	6.84	134		10--200	4.62	6.92	138		3		40
2,4-DB	0.48	0.962	ug/L	<MDL	4.71	6.35	135		10--200	4.62	5.96	129		5		40
Dichloroprop	0.48	0.962	ug/L	<MDL	4.71	4.82	102		10--200	4.62	5.01	108		6		40
Dinoseb	0.48	0.962	ug/L	<MDL	4.71	8.54	181		10--200	4.62	8.26	179		1		40
MCPA	0.48	0.962	ug/L	<MDL	4.71	4.43	94		10--200	4.62	4.76	103		9		40
MCPP	0.48	0.962	ug/L	<MDL	4.71	5.61	119		10--200	4.62	5.36	116		3		40

Surrogate: (Lab Limits)	2,4-Dichlorophenylacetic acid 10--200	2,6-Dichlorophenylacetic acid 10--200
L50993-1	88	115
L50993-2	98	125
L50993-3	94	118
L50993-4	98	118
L50993-5	94	117
WG109660-1	91	116
WG109660-2	93	110
WG109660-3	90	117
WG109660-4	97	114
WG109660-5	98	130

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

August 9, 2010

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180
Mercer Island Stormwater Monitoring, Baseflow Event
Samples L51121-1 to 5, collected July 6, 2010

Attached is the comprehensive report for the water samples collected and delivered to the laboratory on July 6, 2010. The samples were analyzed in the Trace Organics, Microbiology and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:

There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:

There were no anomalies associated with the preparation and the analysis of these samples.

Organics:

There were no anomalies associated with the preparation and the analysis of these samples with the following exception. The Relative Percent Difference (RPD) for 2,4,5-T and 2,4-D were outside the acceptance range at 48 and 49% respectively. The results have been flagged with an "*" in the QC report. Prometon recovery in the Spike Blank and Spike Blan Duplicate were outside the acceptance limits at 0 and 0 % respectively. The results have been flagged with an "*" in the QC report. Prometon is not a compound of interest for this project. No other corrective actions were taken.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

1202M

King County Environmental Lab Analytical Report

Project:	421195-180	421195-180	421195-180
Locator:	MERCERISL06	MERCERISL10	MERCERISL26
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	FOREST AVE. AND 84
Sample:	L51121-1	L51121-2	L51121-3
Matrix:	LK FRESH WTR	LK FRESH WTR	LK FRESH WTR
ColDate:	7/6/10 11:15	7/6/10 11:50	7/6/10 9:40
TimeSpan:			
TotalSolid:			
ClientLoc:			
SampDepth:			
	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
CV SM2540-D															
Total Suspended Solids	10.8		0.5	1	mg/L		<MDL	1	2	mg/L	2.08		0.5	1	mg/L
ES NONE															
Conductivity, Field	295		0.5	10	umhos/cm	289		0.5	10	umhos/cm	277		0.5	10	umhos/cm
Discharge Rate of Stream	0.2		0.05	0.1	cfs	0.2		0.05	0.1	cfs	0.2		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	86.8				%	83.7				%	87.1				%
Dissolved Oxygen, Field	9.2		0.5	1	mg/L	8.5		0.5	1	mg/L	9.2		0.5	1	mg/L
Field Personnel	JP				none	JP				none	JP				none
pH, Field	7.81				pH	7.69				pH	7.73				pH
Sample Temperature, Field	13				deg C	15				deg C	13.2				deg C
Turbidity, Field	2.7		0.5	2	NTU	1.5	<RDL	0.5	2	NTU	2.4		0.5	2	NTU
MC SM 9222D 20TH															
Fecal Coliform	620				CFU/100ml	76				CFU/100ml	95				CFU/100ml
OR SW-846 8151A GCMS MODIFIED															
2,4,5-T		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L
2,4,5-TP (Silvex)		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L
2,4-D		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L
2,4-DB		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L
Dichloroprop		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L
Dinoseb		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L
MCPA		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L
MCPP		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L		<MDL	0.49	0.971	ug/L

King County Environmental Lab Analytical Report

	Project:	421195-180					Project:	421195-180			
	Locator:	MERCERISL32					Locator:	MERCERISL42			
	Descrip:	CREEK NEAR HOLLYHI					Descrip:	E. MERCER WAY			
	Sample:	L51121-4					Sample:	L51121-5			
	Matrix:	LK FRESH WTR					Matrix:	LK FRESH WTR			
	ColDate:	7/6/10 10:07					ColDate:	7/6/10 10:40			
	TimeSpan:						TimeSpan:				
	TotalSolid:						TotalSolid:				
	ClientLoc:						ClientLoc:				
	SampDepth:						SampDepth:				
	WET Weight Basis						**WET Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**		**Value**	**Qual**	**MDL**	**RDL**	**Units**
CV SM2540-D											
Total Suspended Solids	1.17		0.5	1.1	mg/L		2.47		0.5	1	mg/L
ES NONE											
Conductivity, Field	163		0.5	10	umhos/cm		256		0.5	10	umhos/cm
Discharge Rate of Stream	0.1	RDL	0.05	0.1	cfs		0.2		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	81.4				%		85.2				%
Dissolved Oxygen, Field	8.6		0.5	1	mg/L		9.1		0.5	1	mg/L
Field Personnel	JP				none		JP				none
pH, Field	7.56				pH		7.61				pH
Sample Temperature, Field	13.3				deg C		12.6				deg C
Turbidity, Field	2.7		0.5	2	NTU		2.2		0.5	2	NTU
MC SM 9222D 20TH											
Fecal Coliform	290				CFU/100ml		250				CFU/100ml
OR SW-846 8151A GCMS MODIFIED											
2,4,5-T		<MDL	0.49	0.971	ug/L			<MDL	0.49	0.971	ug/L
2,4,5-TP (Silvex)		<MDL	0.49	0.971	ug/L			<MDL	0.49	0.971	ug/L
2,4-D		<MDL	0.49	0.971	ug/L			<MDL	0.49	0.971	ug/L
2,4-DB		<MDL	0.49	0.971	ug/L			<MDL	0.49	0.971	ug/L
Dichloroprop		<MDL	0.49	0.971	ug/L			<MDL	0.49	0.971	ug/L
Dinoseb		<MDL	0.49	0.971	ug/L			<MDL	0.49	0.971	ug/L
MCPA		<MDL	0.49	0.971	ug/L			<MDL	0.49	0.971	ug/L
MCPP		<MDL	0.49	0.971	ug/L			<MDL	0.49	0.971	ug/L

King County Environmental Lab Analytical MATRIX Report

Owner: SEEDPAK
Matrix Class: LIQUID
User select: WET Weight Basis

LOCATOR	PROJECT	SAMPLE	Total Suspended Solids	Conductivity, Field	Discharge Rate of Stream	Dissolved Oxygen Saturation, Field	Dissolved Oxygen, Field	Sample Temperature, Field	Turbidity, Field	pH, Field	Fecal Coliform
			mg/L	umhos/cm	cfs	%	mg/L	deg C	NTU	pH	CFU/100ml
MERCERISL06	421195-180	L51121-1	10.8	295	0.2	86.8	9.2	13	2.7	7.81	620
MERCERISL10	421195-180	L51121-2		289	0.2	83.7	8.5	15	1.5	7.69	76
MERCERISL26	421195-180	L51121-3	2.08	277	0.2	87.1	9.2	13.2	2.4	7.73	95
MERCERISL32	421195-180	L51121-4	1.17	163	0.1	81.4	8.6	13.3	2.7	7.56	290
MERCERISL42	421195-180	L51121-5	2.47	256	0.2	85.2	9.1	12.6	2.2	7.61	250
* Not converted to dry weight basis											

Login: P51121

Project: 421195-180

MERCER ISLAND BASEFLOW SAMPLING

Personnel: J. POWER

CHAIN OF CUSTODY

RELINQUISHED BY JEAN POWER	Date 7/6/2010	Time 1230
RECEIVED BY [illegible]	Date 7-6-10	Time 1230
Sample Number(s) L51121 1-5		(All)

SAMPLENUM	P51121-1	P51121-2	P51121-3
QC LINK			
LOCATOR	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	T_KC_MERCERBASE-3
Locator Desc	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	FOREST AVE. AND 84TH AVE SE
SITE	KING COUNTY	KING COUNTY	KING COUNTY
COMMENTS	baseline micro	baseline micro	baseline micro
Start Date/Time	6-JUL-10/1115	6-JUL-10/1150	6-JUL-10/0940
End Date/Time			
Time Span			
Sample Depth			
COND, FIELD	294.8	288.5	277.2
DO SAT, FIELD	86.8	83.7	87.1
DO, FIELD	9.19	8.49	9.23
PERSONNEL	JP	JP	JP
PH, FIELD	7.81	7.69	7.73
SAMP TEMP	12.96	15.02	13.20
STRM FLOW	0.2 SWOFFER	0.2 CFS	0.2 CFS
TURB, FIELD	2.74	1.48	2.41
Dept. Matrix Prod	3 LK TSS 5 LK FC-MF 7 LK HERB	3 LK TSS 5 LK FC-MF 7 LK HERB	3 LK TSS 5 LK FC-MF 7 LK HERB

DEEP - LOTS.

SHALLOW, CLEAR

1 ORGANICS BOTTLE BROKE - NO SPARES

(QC SAMPLE) ANYWAYS...

Login: P51121

MERCER ISLAND BASEFLOW SAMPLING

Personnel: JP

Project: 421195-180

SAMPLENUM	P51121-4	P51121-5	
QC LINK			
LOCATOR	MERCERISL32	MERCERISL42	
Short Loc. Desc.	T_KC_MERCERBASE-4	T_KC_MERCERBASE-5	
Locator Desc	CREEK NEAR HOLLYHILL DRIVE AND W. MERCER	E. MERCER WAY	
SITE	KING COUNTY	KING COUNTY	
COMMENTS	baseline micro	baseline micro	
Start Date/Time	6-JUL-10 / 1007	6-JUL-10 / 1040 1045	
End Date/Time			
Time Span			
Sample Depth			
COND, FIELD	162.7	256.2 / 256.2	
DO SAT, FIELD	81.4	85.2 / 84.2	
DO, FIELD	8.61	9.11 / 9.03	
PERSONNEL	JP	JP	
PH, FIELD	7.56	7.61 / 7.62	
SAMP TEMP	13.30	12.56 / 12.58	
STRM FLOW	0.1 CFS	0.2 CFS	
TURB, FIELD	2.72	2.24 / 2.07	
Dept. Matrix Prod	3 LK TSS 5 LK FC-MF 7 LK HERB	3 LK TSS 5 LK FC-MF 7 LK HERB	

WAY SHALLOW - NOT ENOUGH DEPTH TO COMPLETELY FILL 2ND ORGANICS BOTTLE

NEW TENANTS IN HOUSE

ESS Observations – WG110169

Date: 7/6/2010

Reported By: J. Power

Sample #(s): L51121

Project Name: Mercer Island Baseflow-July 2010

Project Number: 421195

Field Personnel: JP

Weather during sampling run: Overcast, cool.

Recent weather or conditions that may have an affect on water quality/quantity:
Overall very cool and wet late spring/early summer. Streams somewhat higher than normal for this time of year.

Specific observations that may affect results:
Broke one organics bottle at Basin 6 site (I-90). This site was the randomly selected organics QC site, so there were still two organics bottles left. No spares in kit.

Other observations:
All streams pretty low and clear. Just enough depth to sample at Basins 26 and 32.
Only able to take two flow measurements at each location because streams were so narrow and shallow. All less than .2 CFS.
New tenant at house adjacent to Basin42 site. Pile of old cleaning product bottles, etc. about 20 feet from stream. Items being taken for disposal according to tenant.
Deer at Basin 6. DOT doing major construction between east and west bound lanes very close to site.
Cut down much knotweed at Basin 10.

King County Environmental Laboratory Batch Report — Mercer Island Stormwater Monitoring, Baseflow, L51121

WG110084 TSS

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L51159-3	421196-200	Roads BMP Grant	CVTSS	STORM WTR	7/2/2010 4:29	7/9/2010 11:30	7/12/2010 14:08		
L51159-4	421196-200		CVTSS	STORM WTR	7/2/2010 4:48	7/9/2010 11:30	7/12/2010 14:12		
L51191-1	421196-200		CVTSS	BLANK WTR	7/6/2010 13:20	7/9/2010 11:30	7/12/2010 14:13		
L51115-1	421195-110	Cottage Lake	CVTSS	FRESH WTR	7/7/2010 10:10	7/9/2010 11:30	7/12/2010 14:14		
L51115-2	421195-110		CVTSS	FRESH WTR	7/7/2010 12:00	7/9/2010 11:30	7/12/2010 14:16		
L51115-3	421195-110		CVTSS	FRESH WTR	7/7/2010 12:26	7/9/2010 11:30	7/12/2010 14:21		
L51115-4	421195-110		CVTSS	FRESH WTR	7/7/2010 12:40	7/9/2010 11:30	7/12/2010 14:22		
L51115-5	421195-110		CVTSS	FRESH WTR	7/7/2010 12:11	7/9/2010 11:30	7/12/2010 14:24		
L51115-6	421195-110		CVTSS	FRESH WTR	7/7/2010 9:58	7/9/2010 11:30	7/12/2010 14:25		
L51115-7	421195-110		CVTSS	FRESH WTR	7/7/2010 9:46	7/9/2010 11:30	7/12/2010 14:26		
L51115-8	421195-110		CVTSS	FRESH WTR	7/7/2010 10:57	7/9/2010 11:30	7/12/2010 14:27		
L51115-9	421195-110		CVTSS	FRESH WTR	7/7/2010 10:57	7/9/2010 11:30	7/12/2010 14:28		
L51115-10	421195-110		CVTSS	FRESH WTR	7/7/2010 11:06	7/9/2010 11:30	7/12/2010 14:28		
L51115-11	421195-110		CVTSS	FRESH WTR	7/7/2010 11:13	7/9/2010 11:30	7/12/2010 14:31		
L51121-1	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	7/6/2010 11:15	7/9/2010 11:30	7/12/2010 14:33		
L51121-2	421195-180		CVTSS	FRESH WTR	7/6/2010 11:50	7/9/2010 11:30	7/12/2010 14:34		
L51121-3	421195-180		CVTSS	FRESH WTR	7/6/2010 9:40	7/9/2010 11:30	7/12/2010 14:36		
L51121-4	421195-180		CVTSS	FRESH WTR	7/6/2010 10:07	7/9/2010 11:30	7/12/2010 14:37		
L51121-5	421195-180		CVTSS	FRESH WTR	7/6/2010 10:40	7/9/2010 11:30	7/12/2010 14:38		
L51151-1	421240A	STREAMS MONITOR (surf wtr)	CVTSS	FRESH WTR	7/7/2010 9:17	7/9/2010 11:30	7/12/2010 14:42		
L51151-2	421240A		CVTSS	FRESH WTR	7/7/2010 10:00	7/9/2010 11:30	7/12/2010 14:43		
L51151-3	421240A		CVTSS	FRESH WTR	7/7/2010 10:30	7/9/2010 11:30	7/12/2010 14:44		
L51151-4	421240A		CVTSS	FRESH WTR	7/7/2010 10:45	7/9/2010 11:30	7/12/2010 14:46	WG110084-1, -3, -4, -5, -6, -7, -8	
L51151-5	421240A		CVTSS	FRESH WTR	7/7/2010 11:10	7/9/2010 11:30	7/12/2010 14:47		
L51151-6	421240A		CVTSS	FRESH WTR	7/7/2010 11:25	7/9/2010 11:30	7/12/2010 14:48		
L51151-7	421240A		CVTSS	FRESH WTR	7/7/2010 11:55	7/9/2010 11:30	7/12/2010 14:48		
L51151-8	421240A		CVTSS	FRESH WTR	7/7/2010 12:30	7/9/2010 11:30	7/12/2010 14:50		
L51151-9	421240A		CVTSS	FRESH WTR	7/7/2010 13:00	7/9/2010 11:30	7/12/2010 14:51		
L51151-10	421240A		CVTSS	FRESH WTR	7/7/2010 13:18	7/9/2010 11:30	7/12/2010 14:52		
L51151-11	421240A		CVTSS	FRESH WTR	7/7/2010 13:45	7/9/2010 11:30	7/12/2010 14:55		
L51151-12	421240A		CVTSS	FRESH WTR	7/7/2010 14:15	7/9/2010 11:30	7/12/2010 14:57		
L51152-1	421240A		CVTSS	FRESH WTR	7/7/2010 12:36	7/9/2010 11:30	7/12/2010 14:59		
L51152-2	421240A		CVTSS	FRESH WTR	7/7/2010 12:17	7/9/2010 11:30	7/12/2010 15:00		
L51152-3	421240A		CVTSS	FRESH WTR	7/7/2010 10:39	7/9/2010 11:30	7/12/2010 15:02		
L51152-4	421240A		CVTSS	FRESH WTR	7/7/2010 11:19	7/9/2010 11:30	7/12/2010 15:02		
L51152-5	421240A		CVTSS	FRESH WTR	7/7/2010 11:07	7/9/2010 11:30	7/12/2010 15:04		
L51152-6	421240A		CVTSS	FRESH WTR	7/7/2010 10:17	7/9/2010 11:30	7/12/2010 15:04		
L51152-7	421240A		CVTSS	FRESH WTR	7/7/2010 9:31	7/9/2010 11:30	7/12/2010 15:06		
L51152-8	421240A		CVTSS	FRESH WTR	7/7/2010 9:09	7/9/2010 11:30	7/12/2010 15:06		
WG110084-1	MB		CVTSS	BLANK WTR		7/9/2010 11:30	7/12/2010 13:52		MB1 100709 11:30

WG110084-3	LD	CVTSS	STORM WTR	7/9/2010 11:30	7/12/2010 14:09		L51159-3
WG110084-4	LD	CVTSS	FRESH WTR	7/9/2010 11:30	7/12/2010 14:15		L51115-1
WG110084-5	LD	CVTSS	FRESH WTR	7/9/2010 11:30	7/12/2010 14:35		L51121-2
WG110084-6	MB	CVTSS	BLANK WTR	7/9/2010 11:30	7/12/2010 14:39		MB2 100709 11:30
WG110084-7	LCS	CVTSS	BLANK WTR	7/9/2010 11:30	7/12/2010 14:40		LEVEL1
WG110084-8	LD	CVTSS	FRESH WTR	7/9/2010 11:30	7/12/2010 14:54		L51151-10

WG110169 Field Parameters

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L51121-1	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	7/6/2010 11:15			WG110169-1, -2, -3, -4	
L51121-1	421195-180		ESS-FIELDMETER	FRESH WTR	7/6/2010 11:15				
L51121-2	421195-180		ESS	FRESH WTR	7/6/2010 11:50				
L51121-2	421195-180		ESS-FIELDMETER	FRESH WTR	7/6/2010 11:50				
L51121-3	421195-180		ESS-FIELDMETER	FRESH WTR	7/6/2010 9:40				
L51121-3	421195-180		ESS	FRESH WTR	7/6/2010 9:40				
L51121-4	421195-180		ESS-FIELDMETER	FRESH WTR	7/6/2010 10:07				
L51121-4	421195-180		ESS	FRESH WTR	7/6/2010 10:07				
L51121-5	421195-180		ESS-FIELDMETER	FRESH WTR	7/6/2010 10:40				
L51121-5	421195-180		ESS	FRESH WTR	7/6/2010 10:40				
WG110169-1	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG110169-2	FREP		ESS-FIELDMETER	FRESH WTR					L51121-5 RANGE1
WG110169-3	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG110169-4	CS		ESS-FIELDMETER	BLANK WTR					RANGE1

WG109973 Fecal coliform

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L51121-1	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	7/6/2010 11:15	7/6/2010 14:15	7/7/2010 12:30	WG109974-3, -4, -5, -6	
L51121-2	421195-180		MCFC-MF	FRESH WTR	7/6/2010 11:50	7/6/2010 14:15	7/7/2010 12:30		
L51121-3	421195-180		MCFC-MF	FRESH WTR	7/6/2010 9:40	7/6/2010 14:15	7/7/2010 12:30		
L51121-4	421195-180		MCFC-MF	FRESH WTR	7/6/2010 10:07	7/6/2010 14:15	7/7/2010 12:30		
L51121-5	421195-180		MCFC-MF	FRESH WTR	7/6/2010 10:40	7/6/2010 14:15	7/7/2010 12:30		
WG109974-3	PC		MCFC-MF	BLANK WTR		7/6/2010 14:15	7/7/2010 12:30		QC-PERFORMED:06-JUL-10
WG109974-4	NC		MCFC-MF	BLANK WTR		7/6/2010 14:15	7/7/2010 12:30		QC-PERFORMED:06-JUL-10
WG109974-5	BF		MCFC-MF	BLANK WTR		7/6/2010 14:15	7/7/2010 12:30		QC-PERFORMED:06-JUL-10
WG109974-6	AF		MCFC-MF	BLANK WTR		7/6/2010 14:15	7/7/2010 12:30		QC-PERFORMED:06-JUL-10

King County Environmental Laboratory Batch Report

Mercer Island Stormwater Monitoring, Baseflow, L51121

WG110121 Herbicides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L51121-1	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	7/6/2010 11:15	7/12/2010 10:00	8/2/2010 19:19	WG110121-5, -1, -2, -3, -4	
L51121-2	421195-180		ORHERB	FRESH WTR	7/6/2010 11:50	7/12/2010 10:00	8/2/2010 19:49		
L51121-3	421195-180		ORHERB	FRESH WTR	7/6/2010 9:40	7/12/2010 10:00	8/2/2010 20:17		
L51121-4	421195-180		ORHERB	FRESH WTR	7/6/2010 10:07	7/12/2010 10:00	8/2/2010 20:47		
L51121-5	421195-180		ORHERB	FRESH WTR	7/6/2010 10:40	7/12/2010 10:00	8/2/2010 21:16		
WG110121-1	MB		ORHERB	BLANK WTR		7/12/2010 10:00	8/2/2010 16:23		MB100712
WG110121-2	SB		ORHERB	BLANK WTR		7/12/2010 10:00	8/2/2010 16:52		WG110121-1 WG110121-2
WG110121-3	SBD		ORHERB	BLANK WTR		7/12/2010 10:00	8/2/2010 17:21		WG110121-1
WG110121-4	MS		ORHERB	FRESH WTR		7/12/2010 10:00	8/2/2010 17:51		L51121-1
WG110121-5	MSD		ORHERB	FRESH WTR		7/12/2010 10:00	8/2/2010 18:20		WG110121-4 L51121-1

King County Environmental Laboratory Analytical QC Report Mercer Island Stormwater Monitoring, Baseflow, L51121

Workgroup: WG110084 TSS

MB:WG110084-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LD:WG110084-3 L51159-3 Matrix: STORM WTR Listtype: CVTSS Method: SM2540-D Project: 421196-200
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	25.6	24.6	4		25

LD:WG110084-4 L51115-1 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-110
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	0.7	1.4	mg/L	6.57	6	9		25

LD:WG110084-5 L51121-2 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	<MDL	<MDL			25

MB:WG110084-6 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG110084-7 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	95	95		80--120

LD:WG110084-8 L51151-10 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421240A
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	2.2	1.8	20		25

King County Environmental Laboratory Analytical QC Report Mercer Island Stormwater Monitoring, Baseflow, L51121

Workgroup: WG110169 Field Parameters

CS:WG110169-1 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73.9	100		90--110
pH, Field			pH	6.86	6.83	0.03		0--.2

FREP:WG110169-2 L51121-5 Matrix: FRESH WTR Listtype: ESS-FIELDMETER Method: NONE Project: 421195-180
(Field Replicate)

Parameter	MDL	RDL	Units	SAMP Value	REP Value	RPD^	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	256	256	0		10
Dissolved Oxygen, Field	0.5	1	mg/L	9.1	9	1		20
Sample Temperature, Field			deg C	12.6	12.6	0.02		0.3
pH, Field			pH	7.61	7.62	0.01		0.2

CS:WG110169-3 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73.2	99		90--110
pH, Field			pH	6.86	6.88	0.02		0--.2

CS:WG110169-4 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73.3	99		90--110
Dissolved Oxygen Saturation, Field			%	100	99.8	100		96--104
pH, Field			pH	6.86	6.83	0.03		0--.2

Workgroup: WG109973 Fecal coliform

PC:WG109974-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG109974-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG109974-5 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG109974-6 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

King County Environmental Laboratory Analytical QC Report Mercer Island Stormwater Monitoring, Baseflow, L51121

Workgroup: WG110121 Herbicides

MB:WG110121-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: NONE
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
2,4,5-T	0.5	1	ug/L	<MDL	
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	
2,4-D	0.5	1	ug/L	<MDL	
2,4-DB	0.5	1	ug/L	<MDL	
Dichloroprop	0.5	1	ug/L	<MDL	
Dinoseb	0.5	1	ug/L	<MDL	
MCPA	0.5	1	ug/L	<MDL	
MCPP	0.5	1	ug/L	<MDL	

SBD:WG110121-3 SB:WG110121-2 MB:WG110121-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: NONE
(Spiked Blank Duplicate, Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit	True Value	BD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2,4,5-T	0.5	1	ug/L	<MDL	5	2.31	46		10--200	5	1.71	34		30		40
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	5	5.34	107		10--200	5	5.01	100		7		40
2,4-D	0.5	1	ug/L	<MDL	5	2.73	55		10--200	5	2.21	44		22		40
2,4-DB	0.5	1	ug/L	<MDL	5	6.1	122		10--200	5	6.03	121		1		40
Dichloroprop	0.5	1	ug/L	<MDL	5	4.62	92		10--200	5	4.55	91		1		40
Dinoseb	0.5	1	ug/L	<MDL	5	6.33	127		10--200	5	6.32	126		1		40
MCPA	0.5	1	ug/L	<MDL	5	3.88	78		10--200	5	3.41	68		14		40
MCPP	0.5	1	ug/L	<MDL	5	4.26	85		10--200	5	4.31	86		1		40

MSD:WG110121-5 MS:WG110121-4 L51121-1 Matrix: FRESH WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 421195-180
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2,4,5-T	0.49	0.971	ug/L	<MDL	4.71	2.38	51		10--200	4.71	3.92	83		48	*	40
2,4,5-TP (Silvex)	0.49	0.971	ug/L	<MDL	4.71	4.94	105		10--200	4.71	5.35	113		7		40
2,4-D	0.49	0.971	ug/L	<MDL	4.71	2	43		10--200	4.71	3.33	71		49	*	40
2,4-DB	0.49	0.971	ug/L	<MDL	4.71	5.91	125		10--200	4.71	6.15	130		4		40
Dichloroprop	0.49	0.971	ug/L	<MDL	4.71	4.56	97		10--200	4.71	5.29	112		14		40
Dinoseb	0.49	0.971	ug/L	<MDL	4.71	7.38	157		10--200	4.71	8.43	179		13		40
MCPA	0.49	0.971	ug/L	<MDL	4.71	3.24	69		10--200	4.71	4.6	98		35		40
MCPP	0.49	0.971	ug/L	<MDL	4.71	4.35	92		10--200	4.71	4.83	102		10		40

Surrogate:	2,4-Dichloro phenyl acetic acid	2,6-Dichloro phenyl acetic acid
(Lab Limits)	10--200	10--200
L51121-1	94	88
L51121-2	96	98
L51121-3	90	83
L51121-4	108	107
L51121-5	97	95
WG110121-1	67	66
WG110121-2	82	99
WG110121-3	84	79
WG110121-4	95	95
WG110121-5	101	101

^ For the following parameters, the values in RPD column are Absolute Difference:
pH, Field

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
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Seattle, WA 98119-1507
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TTY Relay: 711

August 30, 2010

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180
Mercer Island Stormwater Monitoring, Baseflow Event
Samples L51343-1 to 5, collected August 2, 2010

Attached is the comprehensive report for the water samples collected and delivered to the laboratory on August 2, 2010. The samples were analyzed in the Trace Organics, Microbiology and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:
There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:
There were no anomalies associated with the preparation and the analysis of these samples.

Organics:
There were no anomalies associated with the preparation and the analysis of these samples with the following exception. The Recovery for Dinoseb was outside the acceptance range (10 - 200%) in the Matrix Spike and Matrix Spike Duplicate at 209 and 205% respectively. The results have been flagged with an "*" in the QC report. Dinoseb was ont detected in any of the samples. No other corrective actions were taken.

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

1202M

King County Environmental Lab Analytical Report

Project:	421195-180	421195-180	421195-180
Locator:	MERCERISL06	MERCERISL10	MERCERISL26
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	FOREST AVE. AND 84
Sample:	L51343-1	L51343-2	L51343-3
Matrix:	LK FRESH WTR	LK FRESH WTR	LK FRESH WTR
ColDate:	8/2/10 10:52	8/2/10 11:15	8/2/10 9:18
TimeSpan:			
TotalSolid:			
ClientLoc:			
SampDepth:			
	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
CV SM2540-D															
Total Suspended Solids	1.6		0.5	1	mg/L		<MDL	0.5	1	mg/L	5		1	2	mg/L
ES NONE															
Conductivity, Field	311		0.5	10	umhos/cm	375		0.5	10	umhos/cm	289		0.5	10	umhos/cm
Discharge Rate of Stream	0.22		0.05	0.1	cfs	0.18		0.05	0.1	cfs		TA	0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	89.2				%	69.9				%	90.1				%
Dissolved Oxygen, Field	9.3		0.5	1	mg/L	7		0.5	1	mg/L	9.1		0.5	1	mg/L
Field Personnel	JP				none	JP				none	JP				none
pH, Field	7.89				pH	7.83				pH	7.01				pH
Sample Temperature, Field	13.7				deg C	15.6				deg C	14.7				deg C
Turbidity, Field	1.5	<RDL	0.5	2	NTU	1.9	<RDL	0.5	2	NTU	3.7		0.5	2	NTU
MC SM 9222D 20TH															
Fecal Coliform	220				CFU/100ml	150				CFU/100ml	64				CFU/100ml
OR SW-846 8151A GCMS MODIFIED															
2,4,5-T		<MDL	0.49	0.971	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.971	ug/L
2,4,5-TP (Silvex)		<MDL	0.49	0.971	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.971	ug/L
2,4-D		<MDL	0.49	0.971	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.971	ug/L
2,4-DB		<MDL	0.49	0.971	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.971	ug/L
Dichloroprop		<MDL	0.49	0.971	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.971	ug/L
Dinoseb		<MDL	0.49	0.971	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.971	ug/L
MCPA		<MDL	0.49	0.971	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.971	ug/L
MCPP		<MDL	0.49	0.971	ug/L		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.971	ug/L

King County Environmental Lab Analytical Report

	Project:	421195-180					Project:	421195-180			
	Locator:	MERCERISL32					Locator:	MERCERISL42			
	Descrip:	CREEK NEAR HOLLYHI					Descrip:	E. MERCER WAY			
	Sample:	L51343-4					Sample:	L51343-5			
	Matrix:	LK FRESH WTR					Matrix:	LK FRESH WTR			
	ColDate:	8/2/10 9:45					ColDate:	8/2/10 10:13			
	TimeSpan:						TimeSpan:				
	TotalSolid:						TotalSolid:				
	ClientLoc:						ClientLoc:				
	SampDepth:						SampDepth:				
	WET Weight Basis						**WET Weight Basis**				
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**		**Value**	**Qual**	**MDL**	**RDL**	**Units**
CV SM2540-D											
Total Suspended Solids	1.3		0.5	1	mg/L		10.5		0.5	1	mg/L
ES NONE											
Conductivity, Field	214		0.5	10	umhos/cm		276		0.5	10	umhos/cm
Discharge Rate of Stream		TA	0.05	0.1	cfs		0.29		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	77.6				%		78.2				%
Dissolved Oxygen, Field	7.9		0.5	1	mg/L		8.2		0.5	1	mg/L
Field Personnel	JP				none		JP				none
pH, Field	7.44				pH		7.68				pH
Sample Temperature, Field	14.3				deg C		13.6				deg C
Turbidity, Field	1.4	<RDL	0.5	2	NTU		4.5		0.5	2	NTU
MC SM 9222D 20TH											
Fecal Coliform	180				CFU/100ml		59				CFU/100ml
OR SW-846 8151A GCMS MODIFIED											
2,4,5-T		<MDL	0.49	0.971	ug/L			<MDL	0.5	0.99	ug/L
2,4,5-TP (Silvex)		<MDL	0.49	0.971	ug/L			<MDL	0.5	0.99	ug/L
2,4-D		<MDL	0.49	0.971	ug/L			<MDL	0.5	0.99	ug/L
2,4-DB		<MDL	0.49	0.971	ug/L			<MDL	0.5	0.99	ug/L
Dichloroprop		<MDL	0.49	0.971	ug/L			<MDL	0.5	0.99	ug/L
Dinoseb		<MDL	0.49	0.971	ug/L			<MDL	0.5	0.99	ug/L
MCPA		<MDL	0.49	0.971	ug/L			<MDL	0.5	0.99	ug/L
MCPP		<MDL	0.49	0.971	ug/L			<MDL	0.5	0.99	ug/L

King County Environmental Lab Analytical MATRIX Report

Owner: SEEDPAK
Matrix Class: LIQUID
User select: WET Weight Basis

LOCATOR	PROJECT	SAMPLE	Total Suspended Solids	Conductivity, Field	Discharge Rate of Stream	Dissolved Oxygen Saturation, Field	Dissolved Oxygen, Field	Sample Temperature, Field	Turbidity, Field	pH, Field	Fecal Coliform
			mg/L	umhos/cm	cfs	%	mg/L	deg C	NTU	pH	CFU/100ml
MERCERISL06	421195-180	L51343-1	1.6	311	0.22	89.2	9.3	13.7	1.5	7.89	220
MERCERISL10	421195-180	L51343-2		375	0.18	69.9	7	15.6	1.9	7.83	150
MERCERISL26	421195-180	L51343-3	5	289		90.1	9.1	14.7	3.7	7.01	64
MERCERISL32	421195-180	L51343-4	1.3	214		77.6	7.9	14.3	1.4	7.44	180
MERCERISL42	421195-180	L51343-5	10.5	276	0.29	78.2	8.2	13.6	4.5	7.68	59
* Not converted to dry weight basis											

King County Environmental Lab Analytical Text Value Report

Project	Sample	Parameter	Textvalue
421195-180	L51343-3	Discharge Rate of Stream	<.1 CFS
421195-180	L51343-4	Discharge Rate of Stream	Too shallow to measure

Login: P51343

Project: 421195-180

MERCER ISLAND BASEFLOW SAMPLING

Personnel: J. Power

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
Jean Power	8/2/2010	1205
RECEIVED BY	**Date**	**Time**
[illegible]	8-2-10	1205
Sample Number(s)		(All)
L51343 1-5		

SAMPLENUM	P51343-1	P51343-2	P51343-3
QC LINK			
LOCATOR	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	T_KC_MERCERBASE-3
Locator Desc	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	FOREST AVE. AND 84TH AVE SE
SITE	KING COUNTY	KING COUNTY	KING COUNTY
COMMENTS	baseline micro	baseline micro	baseline micro
Start Date/Time	2-AUG-10/1052	2-AUG-10/1115	2-AUG-10/0918
End Date/Time			
Time Span			
Sample Depth			
COND, FIELD	311.4	375.0	289.3
DO SAT, FIELD	89.2	69.9	~~90.7~~ 90.1
DO, FIELD	9.27	6.96	~~9.22~~ 9.14
PERSONNEL	JP	JP	JP
PH, FIELD	7.89	7.83	7.01
SAMP TEMP	13.69	15.56	14.67
STRM FLOW	0.22 CFS	0.18 CFS	< 0.1 CFS
TURB, FIELD	1.51	1.86	3.66
Dept. Matrix Prod	3 LK TSS 5 LK FC-MF 7 LK HERB	3 LK TSS 5 LK FC-MF 7 LK HERB	3 LK TSS 5 LK FC-MF 7 LK HERB

* CHANGED QC SAMPLES TO → LOW + CLEAN ORGANICS QC

WG 110784
R 147920

Login: P51343

Project: 421195-180

MERCER ISLAND BASEFLOW SAMPLING

Personnel: JP

SAMPLENUM	P51343-4	P51343-5	
QC LINK			
LOCATOR	MERCERISL32	MERCERISL42	
Short Loc. Desc.	T_KC_MERCERBASE-4	T_KC_MERCERBASE-5	
Locator Desc	CREEK NEAR HOLLYHILL DRIVE AND W. MERCER	E. MERCER WAY	
SITE	KING COUNTY	KING COUNTY	
COMMENTS	baseline micro	baseline micro	
Start Date/Time	2-AUG-10/0945	2-AUG-10 | 1013 1018	
End Date/Time			
Time Span			
Sample Depth			
COND, FIELD	213.9	275.5 | 275.7	
DO SAT, FIELD	77.6	78.2 | 78.6	
DO, FIELD	7.93	8.15 | 8.18	
PERSONNEL	JP	JP	
PH, FIELD	7.44	7.68 | 7.69	
SAMP TEMP	14.33	13.56 | 13.55	
STRM FLOW	TOO LOW TO MEASURE	0.29 CFS	
TURB, FIELD	1.39	4.54 | 4.06	
Dept. Matrix Prod	3 LK TSS 5 LK FC-MF 7 LK HERB	3 LK TSS 5 LK FC-MF 7 LK HERB	

EXTREMELY LOW, CLEAR
TOO LOW TO USE FLOW METER

ESS Field Observations - WG110784

Date: 2-Aug-2010

Reported By: Jean Power

Sample #(s): L51343 1-5

Project Name: Mercer Island Baseflow- August

Project Number: 421195-180

Field Personnel: J. Power

Weather during sampling run:

Recent weather or conditions that may have an affect on water quality/quantity:
Mostly hot and dry over past month or so.

Specific observations that may affect results:
MERCERISL32- no flow data. Water level too low to use Swoffer.

Other observations:
MERCERISL10- low and clear. Organics QC samples collected here.
MERCERISL26- extremely low. Barely able to take a Swoffer reading.
MERCERISL32- extremely low but clear. No flow measurement- too shallow.

King County Environmental Laboratory Batch Report

Mercer Island Stormwater Monitoring, Baseflow, L51343

WG110529 TSS

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L51227-5	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	CVTSS	GRND WTR	7/29/2010 11:10	8/4/2010 9:45	8/4/2010 16:21		
L51234-2	421422-CHSW-P2	SWD-CHSW P - 2 Cedar Hills Surface Water Permit 2	CVTSS	FRESH WTR	7/29/2010 8:30	8/4/2010 9:45	8/4/2010 16:18		
L51234-3	421422-CHSW-P2		CVTSS	FRESH WTR	7/29/2010 7:40	8/4/2010 9:45	8/4/2010 16:18		
L51352-1	421422-CHGW	SWD-CHGW Cedar Hills Groundwater Quarterly	CVTSS	GRND WTR	7/28/2010 11:15	8/4/2010 9:45	8/4/2010 16:22		
L51352-2	421422-CHGW		CVTSS	GRND WTR	7/28/2010 9:40	8/4/2010 9:45	8/4/2010 16:23		
L51360-2	421422-CHGW		CVTSS	GRND WTR	7/30/2010 9:30	8/4/2010 9:45	8/4/2010 16:23		
L51371-1	421422-CHGW		CVTSS	GRND WTR	8/2/2010 6:50	8/4/2010 9:45	8/4/2010 16:24		
L51373-1	421422-CHGW		CVTSS	GRND WTR	7/30/2010 8:45	8/4/2010 9:45	8/4/2010 16:26		
L51373-2	421422-CHGW		CVTSS	GRND WTR	7/30/2010 8:45	8/4/2010 9:45	8/4/2010 16:27		
L51378-1	421422-VAGW	SWD-VAGW Vashon Groundwater Quarterly	CVTSS	GRND WTR	8/3/2010 9:15	8/4/2010 9:45	8/4/2010 16:28		
L51378-2	421422-VAGW		CVTSS	GRND WTR	8/3/2010 7:40	8/4/2010 9:45	8/4/2010 16:28		
L51320-1	421240A	STREAMS MONITOR (surf wtr)	CVTSS	FRESH WTR	8/3/2010 9:26	8/4/2010 9:45	8/4/2010 15:56		
L51320-2	421240A		CVTSS	FRESH WTR	8/3/2010 10:15	8/4/2010 9:45	8/4/2010 15:57		
L51320-3	421240A		CVTSS	FRESH WTR	8/3/2010 10:40	8/4/2010 9:45	8/4/2010 15:57		
L51320-4	421240A		CVTSS	FRESH WTR	8/3/2010 10:53	8/4/2010 9:45	8/4/2010 15:58		
L51320-5	421240A		CVTSS	FRESH WTR	8/3/2010 11:25	8/4/2010 9:45	8/4/2010 15:59		
L51320-6	421240A		CVTSS	FRESH WTR	8/3/2010 11:52	8/4/2010 9:45	8/4/2010 16:00		
L51320-7	421240A		CVTSS	FRESH WTR	8/3/2010 12:20	8/4/2010 9:45	8/4/2010 16:01		
L51320-8	421240A		CVTSS	FRESH WTR	8/3/2010 12:49	8/4/2010 9:45	8/4/2010 16:01		
L51320-9	421240A		CVTSS	FRESH WTR	8/3/2010 13:20	8/4/2010 9:45	8/4/2010 16:02		
L51320-10	421240A		CVTSS	FRESH WTR	8/3/2010 13:36	8/4/2010 9:45	8/4/2010 16:03	WG110529-1, -2, -3, -4, -5, -6, -7, -8	
L51320-11	421240A		CVTSS	FRESH WTR	8/3/2010 14:07	8/4/2010 9:45	8/4/2010 16:03		
L51320-12	421240A		CVTSS	FRESH WTR	8/3/2010 14:40	8/4/2010 9:45	8/4/2010 16:04		
L51321-1	421240A		CVTSS	FRESH WTR	8/3/2010 9:39	8/4/2010 9:45	8/4/2010 16:05		
L51321-2	421240A		CVTSS	FRESH WTR	8/3/2010 10:04	8/4/2010 9:45	8/4/2010 16:06		
L51321-3	421240A		CVTSS	FRESH WTR	8/3/2010 10:45	8/4/2010 9:45	8/4/2010 16:06		
L51321-4	421240A		CVTSS	FRESH WTR	8/3/2010 11:23	8/4/2010 9:45	8/4/2010 16:07		
L51321-5	421240A		CVTSS	FRESH WTR	8/3/2010 11:50	8/4/2010 9:45	8/4/2010 16:08		
L51321-6	421240A		CVTSS	FRESH WTR	8/3/2010 12:17	8/4/2010 9:45	8/4/2010 16:08		
L51321-7	421240A		CVTSS	FRESH WTR	8/3/2010 13:06	8/4/2010 9:45	8/4/2010 16:09		
L51321-8	421240A		CVTSS	FRESH WTR	8/3/2010 13:30	8/4/2010 9:45	8/4/2010 16:10		
L51343-1	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	8/2/2010 10:52	8/4/2010 9:45	8/4/2010 16:12		
L51343-2	421195-180		CVTSS	FRESH WTR	8/2/2010 11:15	8/4/2010 9:45	8/4/2010 16:13		
L51343-3	421195-180		CVTSS	FRESH WTR	8/2/2010 9:18	8/4/2010 9:45	8/4/2010 16:13		
L51343-4	421195-180		CVTSS	FRESH WTR	8/2/2010 9:45	8/4/2010 9:45	8/4/2010 16:16		
L51343-5	421195-180		CVTSS	FRESH WTR	8/2/2010 10:13	8/4/2010 9:45	8/4/2010 16:17		
WG110529-1	MB		CVTSS	BLANK WTR		8/4/2010 9:45	8/4/2010 15:55		MB1 100804 9:45
WG110529-2	LCS		CVTSS	BLANK WTR		8/4/2010 9:45	8/4/2010 15:56		LEVEL1
WG110529-3	LD		CVTSS	FRESH WTR		8/4/2010 9:45	8/4/2010 15:59		L51320-5
WG110529-4	MB		CVTSS	BLANK WTR		8/4/2010 9:45	8/4/2010 16:11		MB2 100804 9:45

WG110529-5	LCS	CVTSS	BLANK WTR	8/4/2010 9:45	8/4/2010 16:11		LEVEL1
WG110529-6	LD	CVTSS	FRESH WTR	8/4/2010 9:45	8/4/2010 16:15		L51343-3
WG110529-7	LD	CVTSS	FRESH WTR	8/4/2010 9:45	8/4/2010 16:20		L51234-3
WG110529-8	LD	CVTSS	GRND WTR	8/4/2010 9:45	8/4/2010 16:25		L51371-1

WG110784 Field Parameters

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L51343-1	421195-180	Mercer Island Stormwater Monitoring	ESS	FRESH WTR	8/2/2010 10:52			WG110784-1, -2, -3, -4	
L51343-1	421195-180		ESS-FIELDMETER	FRESH WTR	8/2/2010 10:52				
L51343-2	421195-180		ESS-FIELDMETER	FRESH WTR	8/2/2010 11:15				
L51343-2	421195-180		ESS	FRESH WTR	8/2/2010 11:15				
L51343-3	421195-180		ESS-FIELDMETER	FRESH WTR	8/2/2010 9:18				
L51343-3	421195-180		ESS	FRESH WTR	8/2/2010 9:18				
L51343-4	421195-180		ESS-FIELDMETER	FRESH WTR	8/2/2010 9:45				
L51343-4	421195-180		ESS	FRESH WTR	8/2/2010 9:45				
L51343-5	421195-180		ESS	FRESH WTR	8/2/2010 10:13				
L51343-5	421195-180		ESS-FIELDMETER	FRESH WTR	8/2/2010 10:13				
WG110784-1	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG110784-2	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG110784-3	FREP		ESS-FIELDMETER	FRESH WTR					L51343-5 RANGE1
WG110784-4	CS		ESS-FIELDMETER	BLANK WTR					RANGE1

WG110457 Fecal coliform

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L51343-1	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	8/2/2010 10:52	8/2/2010 14:13	8/3/2010 13:20	WG110458-3, -4, -5, -6	
L51343-2	421195-180		MCFC-MF	FRESH WTR	8/2/2010 11:15	8/2/2010 14:13	8/3/2010 13:20		
L51343-3	421195-180		MCFC-MF	FRESH WTR	8/2/2010 9:18	8/2/2010 14:13	8/3/2010 13:20		
L51343-4	421195-180		MCFC-MF	FRESH WTR	8/2/2010 9:45	8/2/2010 14:13	8/3/2010 13:20		
L51343-5	421195-180		MCFC-MF	FRESH WTR	8/2/2010 10:13	8/2/2010 14:13	8/3/2010 13:20		
WG110458-3	PC		MCFC-MF	BLANK WTR		8/2/2010 14:30	8/3/2010 13:20		QC-PERFORMED:02-AUG-10
WG110458-4	NC		MCFC-MF	BLANK WTR		8/2/2010 14:30	8/3/2010 13:20		QC-PERFORMED:02-AUG-10
WG110458-5	BF		MCFC-MF	BLANK WTR		8/2/2010 14:30	8/3/2010 13:20		QC-PERFORMED:02-AUG-10
WG110458-6	AF		MCFC-MF	BLANK WTR		8/2/2010 14:30	8/3/2010 13:20		QC-PERFORMED:02-AUG-10

King County Environmental Laboratory Batch Report

Mercer Island Stormwater Monitoring, Baseflow, L51343

WG110523 Herbicides

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L51343-1	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	8/2/2010 10:52	8/4/2010 8:00	8/12/2010 14:12	WG110523-5, -1, -2, -3, -4	
L51343-2	421195-180		ORHERB	FRESH WTR	8/2/2010 11:15	8/4/2010 8:00	8/12/2010 14:42		
L51343-3	421195-180		ORHERB	FRESH WTR	8/2/2010 9:18	8/4/2010 8:00	8/12/2010 15:11		
L51343-4	421195-180		ORHERB	FRESH WTR	8/2/2010 9:45	8/4/2010 8:00	8/12/2010 15:40		
L51343-5	421195-180		ORHERB	FRESH WTR	8/2/2010 10:13	8/4/2010 8:00	8/12/2010 16:09		
WG110523-1	MB		ORHERB	BLANK WTR		8/4/2010 8:00	8/12/2010 9:49		MB100804
WG110523-2	SB		ORHERB	BLANK WTR		8/4/2010 8:00	8/12/2010 10:18		WG110523-1
WG110523-3	SBD		ORHERB	BLANK WTR		8/4/2010 8:00	8/12/2010 10:47		WG110523-2 WG110523-1
WG110523-4	MS		ORHERB	FRESH WTR		8/4/2010 8:00	8/12/2010 11:17		L51343-2
WG110523-5	MSD		ORHERB	FRESH WTR		8/4/2010 8:00	8/12/2010 11:46		WG110523-4 L51343-2

King County Environmental Laboratory Analytical QC Report Mercer Island Stormwater Monitoring, Baseflow, L51343

Workgroup: WG110529 TSS

MB:WG110529-1 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG110529-2 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	95	95		80--120

LD:WG110529-3 L51320-5 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421240A
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	4.6	4.4	4		25

MB:WG110529-4 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG110529-5 Matrix: BLANK WTR Listtype: CVTSS Method: SM2540-D Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	98	98		80--120

LD:WG110529-6 L51343-3 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	5	4	22		25

LD:WG110529-7 L51234-3 Matrix: FRESH WTR Listtype: CVTSS Method: SM2540-D Project: 421422-CHSW-P2
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	5.8	5.6	4		25

King County Environmental Laboratory Analytical QC Report Mercer Island Stormwater Monitoring, Baseflow, L51343

LD:WG110529-8 L51371-1 Matrix: GRND WTR Listtype: CVTSS Method: SM2540-D Project: 421422-CHGW
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	1	1			25

King County Environmental Laboratory Analytical QC Report Mercer Island Stormwater Monitoring, Baseflow, L51343

Workgroup: WG110784 Field Parameters

CS:WG110784-1 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73.4	99		90--110
pH, Field			pH	6.86	6.82	0.04		0--.2

CS:WG110784-2 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73.4	99		90--110
pH, Field			pH	6.86	6.92	0.06		0--.2

FREP:WG110784-3 L51343-5 Matrix: FRESH WTR Listtype: ESS-FIELDMETER Method: NONE Project: 421195-180
(Field Replicate)

Parameter	MDL	RDL	Units	SAMP Value	EP Value	RPD^	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	276	276	0		10
Dissolved Oxygen, Field	0.5	1	mg/L	8.2	8.2	0		20
Sample Temperature, Field			deg C	13.6	13.6	0.01		0.3
Turbidity, Field	0.5	2	NTU	4.5	4.1	11		20
pH, Field			pH	7.68	7.69	0.01		0.2

CS:WG110784-4 Matrix: BLANK WTR Listtype: ESS-FIELDMETER Method: NONE Project: NONE
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	73.5	99		90--110
Dissolved Oxygen Saturation, Field			%	100	97	97		96--104
pH, Field			pH	6.86	6.92	0.06		0--.2

Workgroup: WG110457 Fecal coliform

PC:WG110458-3 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG110458-4 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG110458-5 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG110458-6 Matrix: BLANK WTR Listtype: MCFC-MF Method: SM 9222D 20TH Project: (After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

King County Environmental Laboratory Analytical QC Report Mercer Island Stormwater Monitoring, Baseflow, L51343

Workgroup: WG110523 Herbicides

MB:WG110523-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: NONE
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
2,4,5-T	0.5	1	ug/L	<MDL	
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	
2,4-D	0.5	1	ug/L	<MDL	
2,4-DB	0.5	1	ug/L	<MDL	
Dichloroprop	0.5	1	ug/L	<MDL	
Dinoseb	0.5	1	ug/L	<MDL	
MCPA	0.5	1	ug/L	<MDL	
MCPP	0.5	1	ug/L	<MDL	

SBD:WG110523-3 SB:WG110523-2 MB:WG110523-1 Matrix: BLANK WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: NONE
(Spiked Blank Duplicate, Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit	True Value	BD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2,4,5-T	0.5	1	ug/L	<MDL	5	2.38	48		10--200	5	2.33	47		2		40
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	5	3.95	79		10--200	5	4.17	83		5		40
2,4-D	0.5	1	ug/L	<MDL	5	2.42	48		10--200	5	2.49	50		4		40
2,4-DB	0.5	1	ug/L	<MDL	5	5.26	105		10--200	5	5.56	111		6		40
Dichloroprop	0.5	1	ug/L	<MDL	5	3.65	73		10--200	5	3.89	78		7		40
Dinoseb	0.5	1	ug/L	<MDL	5	8.01	160		10--200	5	8.23	165		3		40
MCPA	0.5	1	ug/L	<MDL	5	2.9	58		10--200	5	3.09	62		7		40
MCPP	0.5	1	ug/L	<MDL	5	3.32	66		10--200	5	3.62	72		9		40

King County Environmental Laboratory Analytical QC Report Mercer Island Stormwater Monitoring, Baseflow, L51343

MSD:WG110523-5 MS:WG110523-4 L51343-2 Matrix: FRESH WTR Listtype: ORHERB Method: SW-846 8151A GCMS MODIFIED Project: 421195-180
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
2,4,5-T	0.5	0.99	ug/L	<MDL	4.9	2.65	54		10--200	4.9	3.24	66		20		40
2,4,5-TP (Silvex)	0.5	0.99	ug/L	<MDL	4.9	4.51	92		10--200	4.9	4.81	98		6		40
2,4-D	0.5	0.99	ug/L	<MDL	4.9	2.64	54		10--200	4.9	3.34	68		23		40
2,4-DB	0.5	0.99	ug/L	<MDL	4.9	5.68	116		10--200	4.9	5.69	116		0		40
Dichloroprop	0.5	0.99	ug/L	<MDL	4.9	4.31	88		10--200	4.9	4.58	93		6		40
Dinoseb	0.5	0.99	ug/L	<MDL	4.9	10.2	209	*	10--200	4.9	10.1	205	*	2		40
MCPA	0.5	0.99	ug/L	<MDL	4.9	3.34	68		10--200	4.9	3.9	79		15		40
MCPP	0.5	0.99	ug/L	<MDL	4.9	4.16	85		10--200	4.9	4.32	88		3		40

Surrogate: (Lab Limits)	2,4-Dichlorophenylacetic acid 10--200	2,6-Dichlorophenylacetic acid 10--200
L51343-1	79	99
L51343-2	83	96
L51343-3	84	111
L51343-4	88	111
L51343-5	80	101
WG110523-1	69	96
WG110523-2	67	97
WG110523-3	73	94
WG110523-4	89	103
WG110523-5	89	113

^ For the following parameters, the values in RPD column are Absolute Difference:
pH, Field
sample Temperature, Field

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

October 13, 2010

TO: Jo Wilhelm
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180
Mercer Island Stormwater Monitoring, Baseflow Event
Samples L51585-1 to 5, collected September 15, 2010

Attached is the comprehensive report for the water samples collected and delivered to the laboratory on September 15, 2010. The samples were analyzed in the Trace Organics, Microbiology and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:
There were no anomalies associated with the preparation and the analysis of these samples.

Microbiology:
There were no anomalies associated with the preparation and the analysis of these samples.

Organics:
There were no anomalies associated with the preparation and the analysis of these samples

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification, except where noted above.

1202M

King County Environmental Lab Analytical Report

	Project:	421195-180					Project:	421195-180					Project:	421195-180							
	Locator:	MERCERISL06					Locator:	MERCERISL10					Locator:	MERCERISL26							
	Descrip:	R/D FACILITY SOUTH					Descrip:	SE 22ND ST, NEAR M					Descrip:	FOREST AVE. AND 84							
	Sample:	L51585-1					Sample:	L51585-2					Sample:	L51585-3							
	Matrix:	LK FRESH WTR					Matrix:	LK FRESH WTR					Matrix:	LK FRESH WTR							
	ColDate:	9/15/10 11:15					ColDate:	9/15/10 11:40					ColDate:	9/15/10 9:45							
	TimeSpan:						TimeSpan:						TimeSpan:								
	TotalSolid:						TotalSolid:						TotalSolid:								
	ClientLoc:						ClientLoc:						ClientLoc:								
	SampDepth:						SampDepth:						SampDepth:								
	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**						
CV SM2540-D																					
Total Suspended Solids	1.22		0.5	1	mg/L		<MDL	0.5	1	mg/L	2.4		0.5	1	mg/L						
ES NONE																					
Conductivity, Field	323		0.5	10	umhos/cm	358		0.5	10	umhos/cm	305		0.5	10	umhos/cm						
Discharge Rate of Stream	0.16		0.05	0.1	cfs	0.11		0.05	0.1	cfs		<MDL,TA	0.05	0.1	cfs						
Dissolved Oxygen Saturation, Field	88.9				%	77				%	84.6				%						
Dissolved Oxygen, Field	9.2		0.5	1	mg/L	7.6		0.5	1	mg/L	8.7		0.5	1	mg/L						
pH, Field	7.9				pH	7.76				pH	7.88				pH						
Sample Temperature, Field	13.6				deg C	15.9				deg C	14.1				deg C						
Turbidity, Field	1.3	<RDL	0.5	2	NTU	0.86	<RDL	0.5	2	NTU	2.5		0.5	2	NTU						
MC SM 9222D 20TH																					
Fecal Coliform	87				CFU/100ml	210				CFU/100ml	200				CFU/100ml						
OR SW-846 8151A GCMS MODIFIED																					
2,4,5-T		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L						
2,4,5-TP (Silvex)		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L						
2,4-D		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L						
2,4-DB		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L						
Dichloroprop		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L						
Dinoseb		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L						
MCPA		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L						
MCPP		<MDL	0.5	0.99	ug/L		<MDL	0.49	0.98	ug/L		<MDL	0.49	0.98	ug/L						

King County Environmental Lab Analytical Report

Project:	421195-180					Project:	421195-180				
Locator:	MERCERISL32					Locator:	MERCERISL42				
Descrip:	CREEK NEAR HOLLYHI					Descrip:	E. MERCER WAY				
Sample:	L51585-4					Sample:	L51585-5				
Matrix:	LK FRESH WTR					Matrix:	LK FRESH WTR				
ColDate:	9/15/10 10:08					ColDate:	9/15/10 10:31				
TimeSpan:						TimeSpan:					
TotalSolid:						TotalSolid:					
ClientLoc:						ClientLoc:					
SampDepth:						SampDepth:					
WET Weight Basis						**WET Weight Basis**					
Parameters	**Value**	**Qual**	**MDL**	**RDL**	**Units**	**Value**	**Qual**	**MDL**	**RDL**	**Units**
CV SM2540-D										
Total Suspended Solids		<MDL	0.5	1	mg/L	7.4		0.5	1	mg/L
ES NONE										
Conductivity, Field	200		0.5	10	umhos/cm	286		0.5	10	umhos/cm
Discharge Rate of Stream		<MDL,TA	0.05	0.1	cfs	0.11		0.05	0.1	cfs
Dissolved Oxygen Saturation, Field	72				%	85.4				%
Dissolved Oxygen, Field	7.4		0.5	1	mg/L	8.9		0.5	1	mg/L
pH, Field	7.27				pH	7.69				pH
Sample Temperature, Field	14.2				deg C	13.3				deg C
Turbidity, Field	1.4	<RDL	0.5	2	NTU	2.1		0.5	2	NTU
MC SM 9222D 20TH										
Fecal Coliform	91				CFU/100ml	32				CFU/100ml
OR SW-846 8151A GCMS MODIFIED										
2,4,5-T		<MDL	0.49	0.98	ug/L		<MDL	0.5	0.99	ug/L
2,4,5-TP (Silvex)		<MDL	0.49	0.98	ug/L		<MDL	0.5	0.99	ug/L
2,4-D		<MDL	0.49	0.98	ug/L		<MDL	0.5	0.99	ug/L
2,4-DB		<MDL	0.49	0.98	ug/L		<MDL	0.5	0.99	ug/L
Dichloroprop		<MDL	0.49	0.98	ug/L		<MDL	0.5	0.99	ug/L
Dinoseb		<MDL	0.49	0.98	ug/L		<MDL	0.5	0.99	ug/L
MCPA		<MDL	0.49	0.98	ug/L		<MDL	0.5	0.99	ug/L
MCPP		<MDL	0.49	0.98	ug/L		<MDL	0.5	0.99	ug/L

King County Environmental Lab Analytical MATRIX Report

Owner: SEEDPAK
Matrix Class: LIQUID
User select: WET Weight Basis

LOCATOR	PROJECT	SAMPLE	Total Suspended Solids	Conductivity, Field	Discharge Rate of Stream	Dissolved Oxygen Saturation, Field	Dissolved Oxygen, Field	Sample Temperature, Field	Turbidity, Field	pH, Field	Fecal Coliform
			mg/L	umhos/cm	cfs	%	mg/L	deg C	NTU	pH	CFU/100ml
MERCERISL06	421195-180	L51585-1	1.22	323	0.16	88.9	9.2	13.6	1.3	7.9	87
MERCERISL10	421195-180	L51585-2		358	0.11	77	7.6	15.9	0.86	7.76	210
MERCERISL26	421195-180	L51585-3	2.4	305		84.6	8.7	14.1	2.5	7.88	200
MERCERISL32	421195-180	L51585-4		200		72	7.4	14.2	1.4	7.27	91
MERCERISL42	421195-180	L51585-5	7.4	286	0.11	85.4	8.9	13.3	2.1	7.69	32
* Not converted to dry weight basis											
If a parameter/analyze appears twice in the column header, it implies that they were analyzed by two different method code											

King County Environmental Lab Analytical Text Value Report

Project	Sample	Parameter	Textvalue
421195-180	L51585-3	Discharge Rate of Stream	<.1 CFS
421195-180	L51585-4	Discharge Rate of Stream	Too low to measure

Logi 51585

Project: 421195-180

MERCER ISLAND BASEFLOW SAMPLING

Personnel: J. Power

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
Jean Power	9/15/2010	1224
RECEIVED BY	Date	Time
[illegible]	9-15-10	1224
Sample Number(s) L51585 1-5		(All)

SAMPLENUM	P51585-1	P51585-2	P51585-3
QC LINK			
LOCATOR	MERCERISL06	MERCERISL10	MERCERISL26
Short Loc. Desc.	MERCER06	MERCER10	T_KC_MERCERBASE-3
Locator Desc	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	FOREST AVE. AND 84TH AVE SE
SITE	KING COUNTY	KING COUNTY	KING COUNTY
COMMENTS	baseline micro	baseline micro	baseline micro
Start Date/Time	15-SEP-10/1115	15-SEP-10/1140	15-SEP-10/0945
End Date/Time			LOW, CLEAR
Time Span			
Sample Depth			
COND, FIELD	323.4	357.8	304.7
DO SAT, FIELD	88.9	~~7.~~ 77.0	84.6
DO, FIELD	9.22	7.59	8.67
PERSONNEL	JP	JP	JP
PH, FIELD	7.90	7.76	7.88
SAMP TEMP	13.59	15.91	14.12
STRM FLOW	~~<0.1 CFS~~ 0.16 CFS	0.11 CFS	>0.1 CFS
TURB, FIELD	1.25	0.86	2.47
Dept. Matrix Prod	3 LK TSS 5 LK FC-MF 7 LK HERB	3 LK TSS 5 LK FC-MF 7 LK HERB	3 LK TSS 5 LK FC-MF 7 LK HERB

Login: P51585

MERCER ISLAND BASEFLOW SAMPLING

Personnel: JP

Project: 421195-180

SAMPLENUM	P51585-4	P51585-5	
QC LINK			
LOCATOR	MERCERISL32	MERCERISL42	
Short Loc. Desc.	T_KC_MERCERBASE-4	T_KC_MERCERBASE-5	
Locator Desc	CREEK NEAR HOLLYHILL DRIVE AND W. MERCER	E. MERCER WAY	
SITE	KING COUNTY	KING COUNTY	
COMMENTS	baseline micro	baseline micro	
Start Date/Time	15-SEP-10/1008	15-SEP-10/1031 1037	
End Date/Time			
Time Span			
Sample Depth			
COND, FIELD	200.4	286.4/287.6	
DO SAT, FIELD	72.0	85.4/87.2	
DO, FIELD	7.36	8.92/9.02	
PERSONNEL	JP	JP	
PH, FIELD	7.27	7.69/7.69	
SAMP TEMP	14.21	13.31/13.30	
STRM FLOW	TOO LOW TO MEASURE	0.11 CFS	
TURB, FIELD	1.43	2.06/1.78	
Dept. Matrix Prod	3 LK TSS 5 LK FC-MF 7 LK HERB	3 LK TSS 5 LK FC-MF 7 LK HERB	

King County Environmental Laboratory Batch Report

Mercer Island SWM, Baseflow, L51585

WG111397 TSS

Sample	Project	Project Description	List Type	Matrix	Collectdate	Prep Date	Anal Date	QC Association	Comments
L51585-1	421195-180	Mercer Island Stormwater Monitoring	CVTSS	FRESH WTR	9/15/2010 11:15	9/21/2010 11:10	9/22/2010 14:22	WG111397-1,-2,-3,-4,-5,-6	
L51585-2	421195-180		CVTSS	FRESH WTR	9/15/2010 11:40	9/21/2010 11:10	9/22/2010 14:23		
L51585-3	421195-180		CVTSS	FRESH WTR	9/15/2010 9:45	9/21/2010 11:10	9/22/2010 14:24		
L51585-4	421195-180		CVTSS	FRESH WTR	9/15/2010 10:08	9/21/2010 11:10	9/22/2010 14:24		
L51585-5	421195-180		CVTSS	FRESH WTR	9/15/2010 10:31	9/21/2010 11:10	9/22/2010 14:25		
L51624-1	421195-110	Cottage Lake	CVTSS	FRESH WTR	9/15/2010 10:50	9/21/2010 11:10	9/22/2010 14:25		
L51624-2	421195-110		CVTSS	FRESH WTR	9/15/2010 10:00	9/21/2010 11:10	9/22/2010 14:26		
L51624-3	421195-110		CVTSS	FRESH WTR	9/15/2010 10:25	9/21/2010 11:10	9/22/2010 14:28		
L51624-4	421195-110		CVTSS	FRESH WTR	9/15/2010 10:40	9/21/2010 11:10	9/22/2010 14:29		
L51624-5	421195-110		CVTSS	FRESH WTR	9/15/2010 10:20	9/21/2010 11:10	9/22/2010 14:30		
L51624-6	421195-110		CVTSS	FRESH WTR	9/15/2010 11:05	9/21/2010 11:10	9/22/2010 14:31		
L51624-7	421195-110		CVTSS	FRESH WTR	9/15/2010 11:20	9/21/2010 11:10	9/22/2010 14:32		
L51624-8	421195-110		CVTSS	FRESH WTR	9/15/2010 9:10	9/21/2010 11:10	9/22/2010 14:32		
L51624-9	421195-110		CVTSS	FRESH WTR	9/15/2010 9:10	9/21/2010 11:10	9/22/2010 14:33		
L51624-10	421195-110		CVTSS	FRESH WTR	9/15/2010 9:10	9/21/2010 11:10	9/22/2010 14:34		
L51624-11	421195-110		CVTSS	FRESH WTR	9/15/2010 9:10	9/21/2010 11:10	9/22/2010 14:34		
L51649-37	421235	MAJOR LAKES (wtr col)	CVTSS	FRESH WTR	9/15/2010 10:26	9/21/2010 11:10	9/22/2010 14:35		
L51649-38	421235		CVTSS	FRESH WTR	9/15/2010 10:22	9/21/2010 11:10	9/22/2010 14:35		
L51649-39	421235		CVTSS	FRESH WTR	9/15/2010 10:17	9/21/2010 11:10	9/22/2010 14:36		
L51649-40	421235		CVTSS	FRESH WTR	9/15/2010 10:14	9/21/2010 11:10	9/22/2010 14:38		
L51649-41	421235		CVTSS	FRESH WTR	9/15/2010 10:08	9/21/2010 11:10	9/22/2010 14:41		
L51649-42	421235		CVTSS	FRESH WTR	9/15/2010 10:01	9/21/2010 11:10	9/22/2010 14:41		
L51649-44	421235		CVTSS	FRESH WTR	9/15/2010 9:05	9/21/2010 11:10	9/22/2010 14:42		
L51649-45	421235		CVTSS	FRESH WTR	9/15/2010 9:10	9/21/2010 11:10	9/22/2010 14:43		
L51649-46	421235		CVTSS	FRESH WTR	9/15/2010 9:14	9/21/2010 11:10	9/22/2010 14:43		
L51649-47	421235		CVTSS	FRESH WTR	9/15/2010 9:20	9/21/2010 11:10	9/22/2010 14:44		
L51649-48	421235		CVTSS	FRESH WTR	9/15/2010 9:25	9/21/2010 11:10	9/22/2010 14:45		
L51649-49	421235		CVTSS	FRESH WTR	9/15/2010 9:32	9/21/2010 11:10	9/22/2010 14:45		
WG111397-1	MB		CVTSS	BLANK WTR		9/21/2010 11:10	9/22/2010 14:21		MB1 100921
WG111397-2	LCS		CVTSS	BLANK WTR		9/21/2010 11:10	9/22/2010 14:22		LEVEL1
WG111397-3	LD		CVTSS	FRESH WTR		9/21/2010 11:10	9/22/2010 14:27		L51624-2
WG111397-4	LD		CVTSS	FRESH WTR		9/21/2010 11:10	9/22/2010 14:37		L51649-39
WG111397-5	MB		CVTSS	BLANK WTR		9/21/2010 11:10	9/22/2010 14:39		MB2 100921
WG111397-6	LCS		CVTSS	BLANK WTR		9/21/2010 11:10	9/22/2010 14:40		LEVEL1

King County Environmental Laboratory Batch Report

Mercer Island SWM, Baseflow, L51585

WG111464 Field Parameters

Sample	Project	Project Description	List Type	Matrix	Collectdate	Prep Date	Anal Date	QC Association	Comments
L51585-1	421195-180	Mercer Island Stormwater Monitoring	ESS-FIELDMETER	FRESH WTR	9/15/2010 11:15			WG111464-1,-2,-3,-4	
L51585-2	421195-180		ESS-FIELDMETER	FRESH WTR	9/15/2010 11:40				
L51585-3	421195-180		ESS-FIELDMETER	FRESH WTR	9/15/2010 9:45				
L51585-4	421195-180		ESS-FIELDMETER	FRESH WTR	9/15/2010 10:08				
L51585-5	421195-180		ESS-FIELDMETER	FRESH WTR	9/15/2010 10:31				
WG111464-1	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG111464-2	FREP		ESS-FIELDMETER	FRESH WTR					L51585-5 RANGE1
WG111464-3	CS		ESS-FIELDMETER	BLANK WTR					RANGE1
WG111464-4	CS		ESS-FIELDMETER	BLANK WTR					RANGE1

King County Environmental Laboratory Batch Report

Mercer Island SWM, Baseflow, L51585

WG110957 Fecal coliform

Sample	Project	Project Description	List Type	Matrix	Collectdate	Prep Date	Anal Date	QC Association	Comments
L51585-1	421195-180	Mercer Island Stormwater Monitoring	MCFC-MF	FRESH WTR	9/15/2010 11:15	9/15/2010 13:00	9/16/2010 13:20		
L51585-2	421195-180		MCFC-MF	FRESH WTR	9/15/2010 11:40	9/15/2010 13:00	9/16/2010 13:20		
L51585-3	421195-180		MCFC-MF	FRESH WTR	9/15/2010 9:45	9/15/2010 13:00	9/16/2010 13:20		
L51585-4	421195-180		MCFC-MF	FRESH WTR	9/15/2010 10:08	9/15/2010 13:00	9/16/2010 13:20		
L51585-5	421195-180		MCFC-MF	FRESH WTR	9/15/2010 10:31	9/15/2010 13:00	9/16/2010 13:20		
WG110957-1	LD		MCFC-MF	BLANK WTR		9/15/2010 13:00	9/16/2010 13:20		L51585-3
WG111262-1	PC		MCFC-MF	BLANK WTR		9/15/2010 13:50	9/16/2010 13:20	WG111262-1,-2,-3,-4,WG110957-1	QC-PERFORMED:15-SEP-10
WG111262-2	NC		MCFC-MF	BLANK WTR		9/15/2010 13:50	9/16/2010 13:20		QC-PERFORMED:15-SEP-10
WG111262-3	BF		MCFC-MF	BLANK WTR		9/15/2010 13:50	9/16/2010 13:20		QC-PERFORMED:15-SEP-10
WG111262-4	AF		MCFC-MF	BLANK WTR		9/15/2010 13:50	9/16/2010 13:20		QC-PERFORMED:15-SEP-10

King County Environmental Laboratory Batch Report

Mercer Island SWM, Baseflow, L51585

WG111389 Herbicides

Sample	Project	Project Description	List Type	Matrix	Collectdate	Prep Date	Anal Date	QC Association	Comments
L51585-1	421195-180	Mercer Island Stormwater Monitoring	ORHERB	FRESH WTR	9/15/2010 11:15	9/21/2010 10:00	9/27/2010 14:55	WG111389-1,-2,-3,-4,-5,L51585-1	
L51585-2	421195-180		ORHERB	FRESH WTR	9/15/2010 11:40	9/21/2010 10:00	9/27/2010 15:23	WG111389-1,-2,-3,-4,-5,L51585-2	
L51585-3	421195-180		ORHERB	FRESH WTR	9/15/2010 9:45	9/21/2010 10:00	9/27/2010 15:53	WG111389-1,-2,-3,-4,-5,L51585-3	
L51585-4	421195-180		ORHERB	FRESH WTR	9/15/2010 10:08	9/21/2010 10:00	9/27/2010 16:22	WG111389-1,-2,-3,-4,-5,L51585-4	
L51585-5	421195-180		ORHERB	FRESH WTR	9/15/2010 10:31	9/21/2010 10:00	9/27/2010 16:51	L51585-5,WG111389-1,-2,-3,-4,-5	
WG111389-1	MB		ORHERB	BLANK WTR		9/21/2010 10:00	9/27/2010 12:29	WG111389-1,-2,-3,-4,-5	MB100921
WG111389-2	SB		ORHERB	BLANK WTR		9/21/2010 10:00	9/27/2010 12:58		WG111389-1
WG111389-3	SBD		ORHERB	BLANK WTR		9/21/2010 10:00	9/27/2010 13:27		WG111389-2 WG111389-1
WG111389-4	MS		ORHERB	FRESH WTR		9/21/2010 10:00	9/27/2010 13:57		L51585-5
WG111389-5	MSD		ORHERB	FRESH WTR		9/21/2010 10:00	9/27/2010 14:26		WG111389-4 L51585-5

King County Environmental Laboratory Analytical QC Report

Mercer Island SWM, Baseflow, L51585

Workgroup: WG111397 TSS

MB:WG111397-1 Matrix: BLANK WTR Listtype:CVTSS Method:SM2540-D Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG111397-2 Matrix: BLANK WTR Listtype:CVTSS Method:SM2540-D Project: Pkey:STD
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	91	91		80--120

LD:WG111397-3 L51624-2 Matrix: FRESH WTR Listtype:CVTSS Method:SM2540-D Project:421195-110 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Total Suspended Solids	0.6	1.1	mg/L	3.11	2.89	7		0--25

LD:WG111397-4 L51649-39 Matrix: FRESH WTR Listtype:CVTSS Method:SM2540-D Project:421235 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD	Qual	Lab Limit
Total Suspended Solids	1	2	mg/L	<MDL	1.2			0--25

MB:WG111397-5 Matrix: BLANK WTR Listtype:CVTSS Method:SM2540-D Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Suspended Solids	0.5	1	mg/L	<MDL	

LCS:WG111397-6 Matrix: BLANK WTR Listtype:CVTSS Method:SM2540-D Project: Pkey:STD
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Total Suspended Solids	5	10	mg/L	100	88	88		80--120

King County Environmental Laboratory Analytical QC Report

Mercer Island SWM, Baseflow, L51585

Workgroup: WG111464 Field parameters

CS:WG111464-1 Matrix: BLANK WTR Listtype:ESS-FIELDMETER Method:NONE Project: Pkey:STD
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	75.3	102		90--110
pH, Field			pH	6.86	6.8	0.06		0--.2

FREP:WG111464-2 L51585-5 Matrix: FRESH WTR Listtype:ESS-FIELDMETER Method:NONE Project:421195-180 Pkey:STD
(Field Replicate)

Parameter	MDL	RDL	Units	SAMP Value	REP Value	RPD	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	286	288	0		0--10
Dissolved Oxygen, Field	0.5	1	mg/L	8.9	9	1		0--20
pH, Field			pH	7.69	7.69	0		0--.2
Sample Temperature, Field			deg C	13.3	13.3	0.01		0--.3
Turbidity, Field	0.5	2	NTU	2.1	1.8	15		0--20

CS:WG111464-3 Matrix: BLANK WTR Listtype:ESS-FIELDMETER Method:NONE Project: Pkey:STD
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	75.2	102		90--110
pH, Field			pH	6.86	6.88	0.02		0--.2

CS:WG111464-4 Matrix: BLANK WTR Listtype:ESS-FIELDMETER Method:NONE Project: Pkey:STD
(Check Standard)

Parameter	MDL	RDL	Units	True Value	CS Value	% Rec.	Qual	Lab Limit
Conductivity, Field	0.5	10	umhos/cm	73.9	75.2	102		90--110
Dissolved Oxygen Saturation, Field			%	100	100.8	101		96--104
pH, Field			pH	6.86	6.89	0.03		0--.2

King County Environmental Laboratory Analytical QC Report

Mercer Island SWM, Baseflow, L51585

Workgroup: WG110957 Fecal coliform

LD:WG110957-1 L51585-3 Matrix: BLANK WTR Listtype:MCFC-MF Method:SM 9222D 20TH Project:421195-180 Pkey:STD
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	Rlog	Precision	Qual
Fecal Coliform			CFU/100ml	200	190	0.02	0.07	N1

PC:WG111262-1 Matrix: BLANK WTR Listtype:MCFC-MF Method:SM 9222D 20TH Project: Pkey:STD
(Positive Control)

Parameter	MDL	RDL	Units	PC Value	Qual
Fecal Coliform			CFU/100ml		PASS

NC:WG111262-2 Matrix: BLANK WTR Listtype:MCFC-MF Method:SM 9222D 20TH Project: Pkey:STD
(Negative Control)

Parameter	MDL	RDL	Units	NC Value	Qual
Fecal Coliform			CFU/100ml		PASS

BF:WG111262-3 Matrix: BLANK WTR Listtype:MCFC-MF Method:SM 9222D 20TH Project: Pkey:STD
(Before Membrane Filtration Blank)

Parameter	MDL	RDL	Units	BF Value	Qual
Fecal Coliform			CFU/100ml	0	

AF:WG111262-4 Matrix: BLANK WTR Listtype:MCFC-MF Method:SM 9222D 20TH Project: Pkey:STD
(After Membrane Filtration Blank)

Parameter	MDL	RDL	Units	AF Value	Qual
Fecal Coliform			CFU/100ml	0	

King County Environmental Laboratory Analytical QC Report

Mercer Island SWM, Baseflow, L51585

Workgroup: WG111389 Herbicides

MB:WG111389-1 Matrix: BLANK WTR Listtype:ORHERB Method:SW-846 8151A GCMS MODIFIED Project: Pkey:STD
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
MCPP	0.5	1	ug/L	<MDL	
MCPA	0.5	1	ug/L	<MDL	
Dichloroprop	0.5	1	ug/L	<MDL	
2,4-D	0.5	1	ug/L	<MDL	
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	
2,4,5-T	0.5	1	ug/L	<MDL	
2,4-DB	0.5	1	ug/L	<MDL	
Dinoseb	0.5	1	ug/L	<MDL	

SBD:WG111389-3 SB:WG111389-2 MB:WG111389-1 Matrix: BLANK WTR Listtype:ORHERB Method:SW-846 8151A GCMS MODIFIED Project: Pkey:STD
(Spiked Blank Duplicate, Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit	True Value	BD Value	% Rec.	Qual	RPD	Qual	Lab Limit
MCPP	0.5	1	ug/L	<MDL	5	4.4	88		10--200	5	4.32	86		2		0--40
MCPA	0.5	1	ug/L	<MDL	5	3.35	67		10--200	5	3.63	73		9		0--40
Dichloroprop	0.5	1	ug/L	<MDL	5	4.45	89		10--200	5	4.44	89		0		0--40
2,4-D	0.5	1	ug/L	<MDL	5	2.42	48		10--200	5	3.09	62		25		0--40
2,4,5-TP (Silvex)	0.5	1	ug/L	<MDL	5	4.97	99		10--200	5	4.98	100		1		0--40
2,4,5-T	0.5	1	ug/L	<MDL	5	2.57	51		10--200	5	2.9	58		13		0--40
2,4-DB	0.5	1	ug/L	<MDL	5	6.72	134		10--200	5	6.74	135		1		0--40
Dinoseb	0.5	1	ug/L	<MDL	5	4.66	93		10--200	5	4.35	87		7		0--40

MSD:WG111389-5 MS:WG111389-4 L51585-5 Matrix: FRESH WTR Listtype:ORHERB Method:SW-846 8151A GCMS MODIFIED Project:421195-180 Pkey:STD
(Matrix Spike Duplicate, Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit	True Value	MSD Value	% Rec.	Qual	RPD	Qual	Lab Limit
MCPP	0.49	0.98	ug/L	<MDL	4.9	4.22	86		10--200	4.9	4.09	83		4		0--40
MCPA	0.49	0.98	ug/L	<MDL	4.9	3.71	76		10--200	4.9	3.53	72		5		0--40
Dichloroprop	0.49	0.98	ug/L	<MDL	4.9	4.45	91		10--200	4.9	4.25	87		4		0--40
2,4-D	0.49	0.98	ug/L	<MDL	4.9	3.27	67		10--200	4.9	3.15	64		5		0--40
2,4,5-TP (Silvex)	0.49	0.98	ug/L	<MDL	4.9	5.02	102		10--200	4.9	4.78	98		4		0--40
2,4,5-T	0.49	0.98	ug/L	<MDL	4.9	3.27	67		10--200	4.9	3.1	63		6		0--40
2,4-DB	0.49	0.98	ug/L	<MDL	4.9	6.49	132		10--200	4.9	6.26	128		3		0--40
Dinoseb	0.49	0.98	ug/L	<MDL	4.9	4.42	90		10--200	4.9	3.44	70		25		0--40

Surrogate:	2,4-Dichlorophenylacetic acid	2,6-Dichlorophenylacetic acid
(Lab Limits)	**10--200**	**0--200**
L51585-1	83	75
L51585-2	87	65
L51585-3	83	72
L51585-4	83	70
L51585-5	89	73
WG111389-1	80	66
WG111389-2	89	62
WG111389-3	86	62
WG111389-4	86	69
WG111389-5	84	75

==========

If the following parameters are reported, values in the RPD column are their Absolute Differences:

pH, Field

Conventionals Data Anomaly Form

Date(s) Occurred: *16-SEP-2010*

WG #(s): *WG111424*

☒ **All samples in WKGP(s)** **or** ☐ **Sample #(s):**

Project #(s): *421422, 421430-300, 421195-110, 421936*

Matrix: ☒ **Liquid** ☐ **Solid** ☐ **Air** ☐ **Tissue** ☐ **Calibration** ☐ **Other:**

I. Analysis

☐ Anions:
☐ Chlorophylls:
☐ Cyanides:
☐ Demands:
☒ Nutrients: *Ammonia Nitrogen (NH3) and Orthophosphate Phosphorus (ORTHOP)*
☐ Physicals:
☐ Solids:
☐ Subcontract:
☐ Other:

II. Instrument

Analytical Balance:	☐ Mettler Toledo XP205 ☐ Ohaus Voyager Pro
	☐ Mettler Toledo AT201
Autoanalyzer:	☒ Astoria2+2 (freshwater system) ☐ Astoria2+2 (saltwater system)
	☐ Astoria2 (total nutrients system) ☐ Astoria2 (cyanide system)
Autotitrator:	☐ Brinkmann Tiamo 855 Autotitrator with integrated 712 Conductometer
Dissolved Oxygen:	☐ YSI 5100 ☐ Brinkmann Bottletop Buret 25
Fluorometer:	☐ Turner 10-AU
Ion Chromatography:	☐ Dionex 120
pH Probe:	☐ Metrohm 736GP ☐ Accument XL60
Salinometer:	☐ Portosal 8410A
Spectrophotometer:	☐ Hitachi U3000 UV/VIS ☐ Hitachi U3000 UV/VIS
	☐ Hach DR 890
TOC Analyzer:	☐ OI 1020A ☐ OI TOC Analyzer
Turbidimeter:	☐ Hach 2100AN
Other:	☐ Description:

III. Type of Sample/Analytical Anomaly

☐ Values Outside of Control Limits:

[1] ☐ Initial Calibration	[4] ☐ MB Anomaly	[7] ☐ MS RPD
[2] ☐ Continuing Calibration Checks	[5] ☐ LCS/SRM Recoveries	[8] ☐ Sample/LD RPD
[3] ☐ SB Spike Recoveries	[6] ☐ Sample/LD/LT RSD	[9] ☐ MS Spike Recoveries

[10] ☐ Holding time exceeded by:
[11] ☐ Insufficient sample amount.
[12] ☐ Inappropriate storage, container or preservation.
☒ Other

Anomaly Description:
Insufficient number of LCS's reported with this batch. LCS's should be included and reported with each batch at the required frequency of 1 every 20 samples. For this batch of 19 samples there was no LCS analyzed.

IV. Type of Project Anomaly

☐ SAP/Work Plan specified MDLs not met.
☐ SAP/Work Plan specified QC frequency or QC type not met.
☐ SAP/Work Plan specified methodology not used.
☐ Sample exceeds regulatory and/or hazardous waste limits.
☐ Sample data results are unusual or inconsistent with expected results.
☐ Other

Anomaly Description:

V. Corrective Action Taken

☐ Sample(s) re-analyzed
☐ Sample(s) re-prepared and re-analyzed
☒ Sample(s) reported "AS IS"
☐ Data qualified with the following flags:
☐ Text added:
☐ Other

Corrective Action Description:
Other than to note the insufficient number of LCS's, no corrective action was taken.

VI. Potential Effects on Data Quality

Based upon the expected performance of this method:

☒ None; corrective action entirely corrected anomaly (explanation optional):
The reported SB included for this batch of samples was acceptable. Therefore, while technically lacking the required LCS, the batch does contain a positive control sample that confirmed the method was in control.

☐ Potential effect explanation (explanation mandatory):

	Signatures	Signature Dates
Reported By: *David C Hunn*	_____	_____
Reviewer: *Casey Maggart*	_____	_____
Supervisor: *Brian Prosch*	_____	_____
QA Officer: *Colin Elliott* **(For QA1 only)**	_____	_____
cc: LPM: *Katherine Bourbonais, Colin Elliot, Fritz Grothkopp*		

Appendix B

Sediment Quality Data Lab Reports for Five Mercer Island Basins

Provided by:

King County Water and Land Resources Division Environmental Laboratory

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

February 25, 2009

TO: Jo Wilhem
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195CY, Mercer Island Sediments
Samples L47101-1- 6, collected December 30, 2008

Attached is the comprehensive report for the sediment samples delivered to the laboratory on December 30, 2008. The samples were analyzed in the Organics, Metals and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:

There were no anomalies associated with the preparation and analysis of these samples. The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification.

Metals:

The data have passed all QA/QC checks and the data may be used without qualification

Organics:

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification.

If you have any questions or need additional information, please call me at 684-2327.

1202M

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL06	MERCERISL10	MERCERISL42	MERCERISL26
Descrip:	R/D FACILITY SOUTH	SE 22ND ST, NEAR M	E. MERCER WAY	FOREST AVE. AND 84
Sampled:	12/30/08 12:10:00 PM	12/30/08 12:30:00 PM	12/30/08 11:25:00 AM	12/30/08 10:30:00 AM
TimeSpan:				
Lab ID:	L47101-1	L47101-2	L47101-3	L47101-4
Matrix:	FRSHWTRSED	FRSHWTRSED	FRSHWTRSED	FRSHWTRSED
% Solids:	49	66.6	54.5	66.9

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
		- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis					- Dry Weight Basis			
COMBINED LABS																				
M=CV SM2540-G																				
Total Solids *	49		0.005	0.01	%	66.6		0.005	0.01	%	54.5		0.005	0.01	%	66.9		0.005	0.01	%
M=MT SW846 3050B*SW846 6010C																				
Chromium, Total, ICP	43.9		0.31	1.52	mg/Kg	25.8		0.23	1.12	mg/Kg	28.6		0.28	1.37	mg/Kg	28.6		0.22	1.12	mg/Kg
Copper, Total, ICP	23.7		0.41	2.03	mg/Kg	23		0.3	1.5	mg/Kg	16.4		0.37	1.83	mg/Kg	10.6		0.3	1.49	mg/Kg
Lead, Total, ICP	10.2		2	10.1	mg/Kg	24.6		1.5	7.49	mg/Kg	7.5	<RDL	1.8	9.14	mg/Kg	4.3	<RDL	1.5	7.47	mg/Kg
Zinc, Total, ICP	88.4		0.51	2.53	mg/Kg	183		0.38	1.88	mg/Kg	51		0.46	2.29	mg/Kg	42.3		0.37	1.87	mg/Kg
M=OR EPA 1664A																				
SGT-Hem (oil, nonpolar)		<MDL	204	510	mg/Kg	233	<RDL	150	375	mg/Kg		<MDL	183	459	mg/Kg		<MDL	149	374	mg/Kg

* Not converted to dry weight basis for this parameter

King County Environmental Lab Analytical Report

PROJECT: 421195CY

Locator:	MERCERISL32					Locator:	MERCERISLDUP			
Descrip:	CREEK NEAR HOLLYHI					Descrip:	FIELD REPLICATE			
Sampled:	12/30/08 10:55:00 AM					Sampled:	12/30/08 11:35:00 AM			
TimeSpan:						TimeSpan:				
Lab ID:	L47101-5					Lab ID:	L47101-6			
Matrix:	FRSHWTRSED					Matrix:	FRSHWTRSED			
% Solids:	67.2					% Solids:	55.9			
Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
		- Dry Weight Basis					- Dry Weight Basis			
COMBINED LABS										
M=CV SM2540-G										
Total Solids *	67.2		0.005	0.01	%	55.9		0.005	0.01	%
M=MT SW846 3050B*SW846 6010C										
Chromium, Total, ICP	24.7		0.22	1.11	mg/Kg	26.1		0.27	1.34	mg/Kg
Copper, Total, ICP	19.5		0.3	1.48	mg/Kg	13.1		0.36	1.78	mg/Kg
Lead, Total, ICP	9.72		1.5	7.41	mg/Kg	6.1	<RDL	1.8	8.91	mg/Kg
Zinc, Total, ICP	126		0.37	1.85	mg/Kg	45.6		0.45	2.22	mg/Kg
M=OR EPA 1664A										
SGT-Hem (oil, nonpolar)		<MDL	149	372	mg/Kg		<MDL	179	447	mg/Kg

* Not converted to dry weight basis for this parameter

PROJECT: 421195CY

King County Environmental Lab Matrix Report

COMBINED LABS-Solid

Locator	Sample Depth	Lab ID	Total Solids *	Chromium, Total, ICP	Copper, Total, ICP	Lead, Total, ICP	Zinc, Total, ICP	SGT-Hem (oil, nonpolar)
			%	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
MERCERISL06		L47101-1	49	43.9	23.7	10.2	88.4	
MERCERISL10		L47101-2	66.6	25.8	23	24.6	183	233
MERCERISL42		L47101-3	54.5	28.6	16.4	7.5	51	
MERCERISL26		L47101-4	66.9	28.6	10.6	4.3	42.3	
MERCERISL32		L47101-5	67.2	24.7	19.5	9.72	126	
MERCERISLDUP		L47101-6	55.9	26.1	13.1	6.1	45.6	

KING COUNTY ENVIRONMENTAL LABORATORY

Analytical Text Value Report

FEB 24 2009, 17:26

PROJECT:421195CY

SAMPLENUM	PARM NAME	TEXT VALUE
L47101-1	Client Locator	MERCERISL06
L47101-1	Sample Information	Pond Above Outlet
L47101-1	Sediment Sampling Depth	0-5 cm
L47101-2	Client Locator	MERCERISL10
L47101-2	Sample Information	Upstream of culvert-rocky with clay bottom
L47101-2	Sediment Sampling Depth	0-5 cm
L47101-3	Client Locator	MERCERISL42
L47101-3	Sample Information	Inside detention structure-silt
L47101-3	Sediment Sampling Depth	0-5 cm
L47101-4	Client Locator	MERCERISL26
L47101-4	Sample Information	Routine site
L47101-4	Sediment Sampling Depth	0-3 cm
L47101-5	Client Locator	MERCERISL32
L47101-5	Sample Information	Routine site-little fine material
L47101-5	Sediment Sampling Depth	0-3 cm
L47101-6	Client Locator	MERCERISL42
L47101-6	Sample Function	FREP@L47101-3
L47101-6	Sample Information	Inside detention structure
L47101-6	Sediment Sampling Depth	0-5 cm

Login Number: P47101

WLRD-MERCER ISLAND ANNUAL BASEFLOW WITH SEDS

Project Number: 421195CY

Personnel: J. POWER

Sample No. (Type)	P47101-1	P47101-2	P47101-3
Locator	MERCERISL06	MERCERISL10	MERCERISL42
Short Loc. Desc.	MERCER06	MERCER10	
Locator Desc.	R/D FACILITY SOUTH OF I-90	SE 22ND ST, NEAR MOUTH	
Site	KING COUNTY	KING COUNTY	KING COUNTY APEP
Start Date/Time	30 DEC-08 / 1210	/ 1230	/ 1125
End Date/Time			
Time Span			
Sample Depth	0-5 cm	→	→
Comments	sediment POND ABOVE OUTLET	sediment U.S. OF CULVERT	sediment INSIDE DETENTION ST.
Dept., Matrix, Prod			
	3 FRSHWTRSED TOTS	3 FRSHWTRSED TOTS	3 FRSHWTRSED TOTS
	6 FRSHWTRSED CR-ICP	6 FRSHWTRSED CR-ICP	6 FRSHWTRSED CR-ICP
	6 FRSHWTRSED CU-ICP	6 FRSHWTRSED CU-ICP	6 FRSHWTRSED CU-ICP
	6 FRSHWTRSED PB-ICP	6 FRSHWTRSED PB-ICP	6 FRSHWTRSED PB-ICP
	6 FRSHWTRSED ZN-ICP	6 FRSHWTRSED ZN-ICP	6 FRSHWTRSED ZN-ICP
	7 FRSHWTRSED SGT-HEM	7 FRSHWTRSED SGT-HEM	7 FRSHWTRSED SGT-HEM
	~~CLAY~~ CLIENT LOC	→	→
SAMP INFO	SAND, SILT - 50/50 BROWN W/P DEBRIS NO ODOR ~8 SPOONS	GRAVEL SAND BROWN/GREY W/P DEBRIS ~20 SPOONS CLAY BOTTOM W/ COBBLES	SILT, SAND BROWN W/P DEBRIS H_2S SLIGHT ~8 SPOONS

continue ...

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
JEAN POWER	12/30/08	13:23
RECEIVED BY	**Date**	**Time**
[illegible]	12/30/08	1323
Sample Number(s)		
P47101 1-6		(All)

WG100H9 192 pts DUE 29-JAN-09

R 131755

WLRD-MERCER ISLAND ANNUAL BASEFLOW WITH SEDS

Project Number: 421195CY

Personnel:

Sample No. (Type)	P47101-4	P47101-5	P47101-6
Locator	MERCERISL26	MERCERISL32	MERCERISLDUP
Short Loc. Desc.			MERCERISLDP
Locator Desc.			FIELD REPLICATE
Site	KING COUNTY	KING COUNTY	KING COUNTY
Start Date/Time	30-DEC-08/1030	/1055	/1135
End Date/Time			
Time Span			
Sample Depth	0-3cm	0-3cm	0-5 cm
Comments	sediment	sediment	field replicate-sediments
CLIENT LOC	**********	**********	MERCERISL42
SAMP FUNC	**********	**********	FREP@L4710-3
Dept., Matrix, Prod			
	3 FRSHWTRSED TOTS	3 FRSHWTRSED TOTS	3 FRSHWTRSED TOTS
	6 FRSHWTRSED CR-ICP	6 FRSHWTRSED CR-ICP	6 FRSHWTRSED CR-ICP
	6 FRSHWTRSED CU-ICP	6 FRSHWTRSED CU-ICP	6 FRSHWTRSED CU-ICP
	6 FRSHWTRSED PB-ICP	6 FRSHWTRSED PB-ICP	6 FRSHWTRSED PB-ICP
	6 FRSHWTRSED ZN-ICP	6 FRSHWTRSED ZN-ICP	6 FRSHWTRSED ZN-ICP
	7 FRSHWTRSED SGT-HEM	7 FRSHWTRSED SGT-HEM	7 FRSHWTRSED SGT-HEM
	CLIENT LOC	A LITTLE HEADSPACE...	
	SAND, SILT BROWN NO ODOR NO DEBRIS ~20 SPOONS	SAND, SILT BROWN NO ODOR W/P DEBRIS ~20 SPOONS ALL AVAIL. SEDIMENT COLLECTED	DESCR. SAME AS -3

End of Fieldsheet.

LIMSView Batch Report

WG100090 Total Solids

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47101-1	421195CY	FRSHWTRSED	12/30/2008 12:10	1/7/2009 9:40	1/8/2009 12:27	WG100090-1, -2, -3	
L47101-2	421195CY	FRSHWTRSED	12/30/2008 12:30	1/7/2009 9:40	1/8/2009 12:28	WG100090-1, -2, -3	
L47101-3	421195CY	FRSHWTRSED	12/30/2008 11:25	1/7/2009 9:40	1/8/2009 12:29	WG100090-1, -2, -3	
L47101-4	421195CY	FRSHWTRSED	12/30/2008 10:30	1/7/2009 9:40	1/8/2009 12:29	WG100090-1, -2, -3	
L47101-5	421195CY	FRSHWTRSED	12/30/2008 10:55	1/7/2009 9:40	1/8/2009 12:30	WG100090-1, -2, -3	
L47101-6	421195CY	FRSHWTRSED	12/30/2008 11:35	1/7/2009 9:40	1/8/2009 12:30	WG100090-1, -2, -3	FREP@L47101-3
WG100090-1	MB	OTHR SOLID		1/7/2009 9:40	1/8/2009 12:27	WG100090-1, -2, -3	MB1
WG100090-2	LD	FRSHWTRSED		1/7/2009 9:40	1/8/2009 12:28	WG100090-1, -2, -3	L47101-2
WG100090-3	LT	FRSHWTRSED		1/7/2009 9:40	1/8/2009 12:28	WG100090-1, -2, -3	WG100090-2 L47101-2

WG100550 Total Metals by ICP

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47101-1	421195CY	FRSHWTRSED	12/30/2008 12:10	2/9/2009 8:00	2/9/2009 12:45	WG100550-1, -2, -3, -6, -4, -5	
L47101-2	421195CY	FRSHWTRSED	12/30/2008 12:30	2/9/2009 8:00	2/9/2009 12:50	WG100550-1, -2, -3, -6, -4, -5	
L47101-3	421195CY	FRSHWTRSED	12/30/2008 11:25	2/9/2009 8:00	2/9/2009 12:56	WG100550-1, -2, -3, -6, -4, -5	
L47101-4	421195CY	FRSHWTRSED	12/30/2008 10:30	2/9/2009 8:00	2/9/2009 13:11	WG100550-1, -2, -3, -6, -4, -5	
L47101-5	421195CY	FRSHWTRSED	12/30/2008 10:55	2/9/2009 8:00	2/9/2009 13:27	WG100550-1, -2, -3, -6, -4, -5	
L47101-6	421195CY	FRSHWTRSED	12/30/2008 11:35	2/9/2009 8:00	2/9/2009 13:32	WG100550-1, -2, -3, -6, -4, -5	FREP@L47101-3
WG100550-1	SB	SOLIDBLANK		2/9/2009 8:00	2/9/2009 12:24	WG100550-1, -2, -3, -6, -4, -5	WG100550-3 ICPH SPIKE BLANK
WG100550-2	LCS	FRSHWTRSED		2/9/2009 8:00	2/9/2009 12:30	WG100550-1, -2, -3, -6, -4, -5	BUFFSED M1-15-30
WG100550-3	MB	SOLIDBLANK		2/9/2009 8:00	2/9/2009 12:35	WG100550-1, -2, -3, -6, -4, -5	DIGESTED METHOD BLANK
WG100550-4	LD	FRSHWTRSED		2/9/2009 8:00	2/9/2009 13:01	WG100550-1, -2, -3, -6, -4, -5	L47101-3 RPD-SOL LAB DUPLICATE
WG100550-5	MS	FRSHWTRSED		2/9/2009 8:00	2/9/2009 13:06	WG100550-1, -2, -3, -6, -4, -5	L47101-3 ICPH MATRIX SPIKE
WG100550-6	LCS	SOIL		2/9/2009 8:00	2/9/2009 12:40	WG100550-1, -2, -3, -6, -4, -5	ERASOIL M-07-023

LIMSView Batch Report

WG100129 Oil, nonpolar

Sample	Project	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L47101-1	421195CY	FRSHWTRSED	12/30/2008 12:10	1/8/2009 7:00	1/9/2009 11:11	WG100129-1, -2, -3, -4	
L47101-2	421195CY	FRSHWTRSED	12/30/2008 12:30	1/8/2009 7:00	1/9/2009 11:11	WG100129-1, -2, -3, -4	
L47101-3	421195CY	FRSHWTRSED	12/30/2008 11:25	1/8/2009 7:00	1/9/2009 11:11	WG100129-1, -2, -3, -4	
L47101-4	421195CY	FRSHWTRSED	12/30/2008 10:30	1/8/2009 7:00	1/9/2009 11:11	WG100129-1, -2, -3, -4	
L47101-5	421195CY	FRSHWTRSED	12/30/2008 10:55	1/8/2009 7:00	1/9/2009 11:11	WG100129-1, -2, -3, -4	
L47101-6	421195CY	FRSHWTRSED	12/30/2008 11:35	1/8/2009 7:00	1/9/2009 11:11	WG100129-1, -2, -3, -4	FREP@L47101-3
WG100129-1	MB	OTHR SOLID		1/8/2009 7:00	1/9/2009 11:11	WG100129-1, -2, -3, -4	MB090108
WG100129-2	SB	OTHR SOLID		1/8/2009 7:00	1/9/2009 11:11	WG100129-1, -2, -3, -4	WG100129-1
WG100129-3	MS	FRSHWTRSED		1/8/2009 7:00	1/9/2009 11:11	WG100129-1, -2, -3, -4	L47101-2
WG100129-4	LD	FRSHWTRSED		1/8/2009 7:00	1/9/2009 11:11	WG100129-1, -2, -3, -4	L47101-4

LIMSView Analytical QC Report

Workgroup: WG100090 Total Solids

MB:WG100090-1 Matrix: OTHR SOLID Listtype: CVTOTS Method: SM2540-G Project: Pkey: SED
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%	<MDL	

LT:WG100090-3 LD:WG100090-2 L47101-2 Matrix: FRSHWTRSED Listtype: CVTOTS Method: SM2540-G Project: 421195CY Pkey: SED
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	66.6	69.6	71.8	4		20

LIMSView Analytical QC Report

Workgroup: WG100550 Total Metals by ICP

SB:WG100550-1 MB:WG100550-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE Pkey: SED
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Chromium, Total, ICP	0.14	0.714	mg/Kg	<MDL	47.6	47.9	101		85--115
Copper, Total, ICP	0.19	0.952	mg/Kg	<MDL	47.6	49	103		85--115
Lead, Total, ICP	0.95	4.76	mg/Kg	<MDL	47.6	47.1	99		85--115
Zinc, Total, ICP	0.24	1.19	mg/Kg	<MDL	47.6	45.7	96		85--115

LCS:WG100550-2 Matrix: FRSHWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE Pkey: SED
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Chromium, Total, ICP	0.6	2.99	mg/Kg	121.9	70.8	58		40--80
Zinc, Total, ICP	1	4.99	mg/Kg	408	374	92		69--109

MB:WG100550-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: Pkey: SED
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Chromium, Total, ICP	0.14	0.714	mg/Kg	<MDL	
Copper, Total, ICP	0.19	0.952	mg/Kg	<MDL	
Lead, Total, ICP	0.95	4.76	mg/Kg	<MDL	
Zinc, Total, ICP	0.24	1.19	mg/Kg	<MDL	

LD:WG100550-4 L47101-3 Matrix: FRSHWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 421195CY Pkey: SED
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Chromium, Total, ICP	0.15	0.747	mg/Kg	15.6	16	2		20
Copper, Total, ICP	0.2	0.996	mg/Kg	8.94	8.06	10		20
Lead, Total, ICP	1	4.98	mg/Kg	4.1	3.6			20
Zinc, Total, ICP	0.25	1.25	mg/Kg	27.8	27.1	2		20

LIMSView Analytical QC Report

MS:WG100550-5 L47101-3 Matrix: FRSHWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 421195CY Pkey: SED (Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Chromium, Total, ICP	0.15	0.748	mg/Kg	15.6	49.9	65.9	101		75--125
Copper, Total, ICP	0.2	0.997	mg/Kg	8.94	49.9	59.6	102		75--125
Lead, Total, ICP	1	4.99	mg/Kg	4.1	49.9	52.2	96		75--125
Zinc, Total, ICP	0.25	1.25	mg/Kg	27.8	49.9	74.9	94		75--125

LCS:WG100550-6 Matrix: SOIL Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE Pkey: SED (Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Chromium, Total, ICP	0.61	3.07	mg/Kg	72.9	76	104		79--121
Copper, Total, ICP	0.82	4.09	mg/Kg	68.5	75.3	110		80--120
Lead, Total, ICP	4.1	20.5	mg/Kg	130	144	111		80--120
Zinc, Total, ICP	1	5.11	mg/Kg	177	192	109		79--121

LIMSView Analytical QC Report

Workgroup: WG100129 Oil, nonpolar

MB:WG100129-1 Matrix: OTHR SOLID Listtype: ORSGT-HEM Method: EPA 1664A Project: Pkey: SED
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
SGT-Hem (oil, nonpolar)	100	250	mg/Kg	<MDL	

SB:WG100129-2 MB:WG100129-1 Matrix: OTHR SOLID Listtype: ORSGT-HEM Method: EPA 1664A Project: NONE Pkey: SED
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
SGT-Hem (oil, nonpolar)	100	250	mg/Kg	<MDL	1000	675	68		64--132

MS:WG100129-3 L47101-2 Matrix: FRSHWTRSED Listtype: ORSGT-HEM Method: EPA 1664A Project: 421195CY Pkey: SED
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
SGT-Hem (oil, nonpolar)	100	250	mg/Kg	155	1000	925	77		64--132

LD:WG100129-4 L47101-4 Matrix: FRSHWTRSED Listtype: ORSGT-HEM Method: EPA 1664A Project: 421195CY Pkey: SED
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
SGT-Hem (oil, nonpolar)	100	250	mg/Kg	<MDL	<MDL			34

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

November 5, 2009

TO: Jo Wilhem
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180, Mercer Island Sediments Samples L48730-1, -2, collected September 21, 2009

Attached is the comprehensive report for the sediment samples delivered to the laboratory on September 21, 2009. The samples were analyzed in the Organics, Metals and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification with the following exception. The %RSD for the lab triplicate analysis of the silt category for Particle Size Distribution was outside the limit of 20%. The results for the silt range for the sample used for QC, L48730-1, have been flagged with a "J". No other corrective action was taken because the silt category represents less than 2% of the total mass of the sample.

Metals:

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification with the following exceptions. The RPD failed for Chromium at 23%. The chromium result for sample L48730-1 has been flagged with a "J". The percent recovery for lead failed at 179%. The lead result for sample L48730-1 has been flagged with a "J".

1202M

Organics:

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification.

If you have any questions or need additional information, please call me at 684-2327.

King County Environmental Lab Analytical Report

Project:	421195-180	Project:	421195-180
Locator:	MERCERISL10	Locator:	MERCERISL32
Descrip:	SE 22ND ST, NEAR M	Descrip:	CREEK NEAR HOLLYHI
Sample:	L48730-1	Sample:	L48730-2
Matrix:	SE FRSHWTRSED	Matrix:	SE FRSHWTRSED
ColDate:	9/21/09 12:40	ColDate:	9/21/09 10:30
TimeSpan:		TimeSpan:	
TotalSolid:	81.9	TotalSolid:	73.8
ClientLoc:		ClientLoc:	
SampDepth:		SampDepth:	
DRY Weight Basis		**DRY Weight Basis**	

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
CV ASTM D422										
Clay*		<MDL	0.59	1.18	%		<MDL	0.67	1.35	%
Fines*	2.4		0.59	1.18	%	5.4		0.67	1.35	%
Gravel*	56.2		0.12	1.18	%	55.6		0.13	1.35	%
Sand*	38.1		0.12	1.18	%	40.1		0.13	1.35	%
Silt*	2.4	J	0.59	1.18	%	5.4		0.67	1.35	%
p+0.00*	18.5		0.12	1.18	%	9.4		0.13	1.35	%
p+1.00*	11.3		0.12	1.18	%	8.4		0.13	1.35	%
p+10.0(equal/more than)*		<MDL	0.59	1.18	%		<MDL	0.67	1.35	%
p+2.00*	6.3		0.12	1.18	%	12.2		0.13	1.35	%
p+3.00*	1.5		0.12	1.18	%	7.3		0.13	1.35	%
p+4.00*	0.5	<RDL	0.12	1.18	%	2.8		0.13	1.35	%
p+5.00*	1.2		0.59	1.18	%	4		0.67	1.35	%
p+6.00*	0.6	<RDL	0.59	1.18	%	1.3		0.67	1.35	%
p+7.00*	0.6	<RDL	0.59	1.18	%		<MDL	0.67	1.35	%
p+8.00*		<MDL	0.59	1.18	%		<MDL	0.67	1.35	%
p+9.00*		<MDL	0.59	1.18	%		<MDL	0.67	1.35	%
p-1.00*	22.6		0.12	1.18	%	15.4		0.13	1.35	%
p-2.00*	3.6		0.12	1.18	%	7.7		0.13	1.35	%
p-2.00(less than)*	30.1		0.12	1.18	%	32.5		0.13	1.35	%
CV SM2540-G										
Total Solids*	81.9		0.005	0.01	%	73.8		0.005	0.01	%
MT SW846 3050B*SW846 6010C										
Chromium, Total, ICP	17.1	J	0.18	0.896	mg/Kg	19.6		0.2	1.01	mg/Kg
Copper, Total, ICP	19.7		0.24	1.19	mg/Kg	16		0.27	1.35	mg/Kg
Lead, Total, ICP	19.3	J	1.2	5.97	mg/Kg	6.4	<RDL	1.4	6.76	mg/Kg
Zinc, Total, ICP	143		0.29	1.49	mg/Kg	95.1		0.34	1.69	mg/Kg
OR EPA 1664A										
SGT-Hem (oil, nonpolar)		<MDL	122	305	mg/Kg	1420		136	339	mg/Kg

* Not converted to dry weight basis

Login Number: P48730

MERCER ISLAND ANNUAL SEDIMENTS

Project Number: 421195-180

Personnel: J. Power

Sample No. (Type)	P48730-1	P48730-2	
Locator	MERCERISL10	MERCERISL32	
Short Loc. Desc.	MERCER10		
Locator Desc.	SE 22ND ST, NEAR MOUTH		
Site	KING COUNTY	KING COUNTY	
Start Date/Time	21-SEP-09/1240	21-SEP-09/1030	
End Date/Time	VERY LITTLE FINE MATERIAL - TOOK ALL OF IT	VERY LITTLE FINE MATERIAL TO COLLECT	
Time Span			
Sample Depth	SE 22ND SAND/GRAVEL - FEW FINES →	HOLLY HILL	
Comments	sediment	sediment	
Dept., Matrix, Prod			
	3 FRSHWTRSED PSD	3 FRSHWTRSED PSD	
	3 FRSHWTRSED TOTS	3 FRSHWTRSED TOTS	
	6 FRSHWTRSED CR-ICP	6 FRSHWTRSED CR-ICP	
	6 FRSHWTRSED CU-ICP	6 FRSHWTRSED CU-ICP	
	6 FRSHWTRSED PB-ICP	6 FRSHWTRSED PB-ICP	
	6 FRSHWTRSED ZN-ICP	6 FRSHWTRSED ZN-ICP	
	7 FRSHWTRSED SGT-HEM	7 FRSHWTRSED SGT-HEM	
	SAMP INFO	SAMP INFO	
	SAND GRAVEL NO DEBRIS NO ODOR GREY	SAND GRAVEL NO DEBRIS NO ODOR BROWN ~25 SPOONS	

End of Fieldsheet.

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
Jean Power	9/21/09	1335
RECEIVED BY	Date	Time
[illegible]	9-21-09	1335
Sample Number(s)		
L48730 1+2		(All)

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring Sediment Samples, L48730

Workgroup: WG105297 Particle Size Distribution

LT:WG105297-2 LD:WG105297-1 L48730-1 Matrix: FRSHWTRSED Listtype: CVPSD Method: ASTM D422 Project: 421195-180 (Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.57	1.14	%	<MDL	<MDL	<MDL			20
Gravel	0.11	1.14	%	56.2	51	50.6	6		20
Sand	0.11	1.14	%	38.1	46.3	43.6	10		20
Silt	0.57	1.14	%	2.4	1.1	1.1	48	*	20

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring
Sediment Samples, L48730

Workgroup: WG104901 Total Solids

MB:WG104901-1 Matrix: OTHR SOLID Listtype: CVTOTS Method: SM2540-G Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%	<MDL	

LT:WG104901-3 LD:WG104901-2 L48730-2 Matrix: FRSHWTRSED Listtype: CVTOTS Method: SM2540-G Project: 421195-180
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	73.8	75.1	75.6	1		20

LT:WG104901-5 LD:WG104901-4 L49050-3 Matrix: SOIL Listtype: CVTOTS Method: SM2540-G Project: 423582-000-2
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	73.6	67.6	70.7	4		20

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring Sediment Samples, L48730

Workgroup: WG105345 Total Metals by ICP

MB:WG105345-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: (Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Chromium, Total, ICP	0.14	0.714	mg/Kg	<MDL	
Copper, Total, ICP	0.19	0.952	mg/Kg	<MDL	
Lead, Total, ICP	0.95	4.76	mg/Kg	<MDL	
Zinc, Total, ICP	0.24	1.19	mg/Kg	<MDL	

SB:WG105345-1 MB:WG105345-3 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE (Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Chromium, Total, ICP	0.14	0.714	mg/Kg	<MDL	47.6	48.8	102		85--115
Copper, Total, ICP	0.19	0.952	mg/Kg	<MDL	47.6	48.5	102		85--115
Lead, Total, ICP	0.95	4.76	mg/Kg	<MDL	47.6	47	99		85--115
Zinc, Total, ICP	0.24	1.19	mg/Kg	<MDL	47.6	46.8	98		85--115

LCS:WG105345-2 Matrix: FRSHWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE (Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Chromium, Total, ICP	0.58	2.92	mg/Kg	121.9	71.1	58		40--80
Zinc, Total, ICP	0.97	4.87	mg/Kg	408	360	88		69--109

LD:WG105345-4 L48730-1 Matrix: FRSHWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 421195-180 (Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
Chromium, Total, ICP	0.15	0.74	mg/Kg	14	17.7	23	*	20
Copper, Total, ICP	0.2	0.987	mg/Kg	16.1	18.1	12		20
Lead, Total, ICP	0.99	4.93	mg/Kg	15.8	15.2	4		20
Zinc, Total, ICP	0.25	1.23	mg/Kg	117	118	1		20

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring
Sediment Samples, L48730

MS:WG105345-5 L48730-1 Matrix: FRSHWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 421195-180
(Matrix Spike)

Parameter	MDL	RDL	Units	Samp Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Chromium, Total, ICP	0.15	0.728	mg/Kg	14	48.5	63.2	101		75--125
Copper, Total, ICP	0.19	0.97	mg/Kg	16.1	48.5	64.3	99		75--125
Lead, Total, ICP	0.97	4.85	mg/Kg	15.8	48.5	103	179	*	75--125
Zinc, Total, ICP	0.24	1.21	mg/Kg	117	48.5	158	84		75--125

LCS:WG105345-6 Matrix: SOIL Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Chromium, Total, ICP	0.55	2.75	mg/Kg	72.9	71.4	98		79--121
Copper, Total, ICP	0.73	3.66	mg/Kg	68.5	67.6	99		80--120
Lead, Total, ICP	3.7	18.3	mg/Kg	130	130	100		80--120
Zinc, Total, ICP	0.92	4.58	mg/Kg	177	175	99		79--121

King County Environmental Lab Analytical QC Report

Mercer Island Stormwater Monitoring
Sediment Samples, L48730

Workgroup: WG105014 (SGT-HEM soils) Run ID: R138159

MB:WG105014-1 Matrix: OTHR SOLID Listtype: ORSGT-HEM Method: EPA 1664A Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
SGT-Hem (oil, nonpolar)	100	250	mg/Kg	<MDL	

SBD:WG105014-3 SB:WG105014-2 MB:WG105014-1 Matrix: OTHR SOLID Listtype: ORSGT-HEM Method: EPA 1664A Project: NONE
(Spiked Blank Duplicate, Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit	True Value	BD Value	% Rec.	Qual	RPD	Qual	Lab Limit
SGT-Hem (oil, nonpolar)	100	250	mg/Kg	<MDL	1000	855	86		64--132	1000	830	83		4		34

LD:WG105014-4 L48730-1 Matrix: FRSHWTRSED Listtype: ORSGT-HEM Method: EPA 1664A Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	Samp Value	LD Value	RPD^	Qual	Lab Limit
SGT-Hem (oil, nonpolar)	100	250	mg/Kg	<MDL	235			34

Conventionals Data Anomaly Form

Date(s) Occurred: *10/14/2009*

WG #(s): *WG105297*

☐ **All samples in WKGP(s)** **or** ☒ **Sample #(s):** *L48730-1, WG105297-1 (L48730-1 LD), and WG105297-2 (L48730-1 LT)*

Project #(s): *421195*

Matrix: ☐ **Liquid** ☒ **Solid** ☐ **Air** ☐ **Tissue** ☐ **Calibration** ☐ **Other:**

I. Analysis

☐ Anions:
☐ Chlorophylls:
☐ Cyanides:
☐ Demands:
☐ Nutrients:
☐ Physicals:
☒ Solids: *Particle Size Distribution (PSD)*
☐ Subcontract:
☐ Other:

II. Instrument

Analytical Balance:	☒ Mettler Toledo XP205 ☒ Ohaus Voyager Pro
	☐ Mettler Toledo AT201
Autoanalyzer:	☐ Astoria2+2 (freshwater system) ☐ Astoria2+2 (saltwater system)
	☐ Astoria2 (total nutrients system) ☐ Astoria2 (cyanide system)
Autotitrator:	☐ Brinkmann Tiamo 855 Autotitrator with integrated 712 Conductometer
Dissolved Oxygen:	☐ YSI 5100 ☐ Brinkmann Bottletop Buret 25
Fluorometer:	☐ Turner 10-AU
Ion Chromatography:	☐ Dionex 120
pH Probe:	☐ Metrohm 736GP ☐ Accument XL60
Salinometer:	☐ Portosal 8410A
Spectrophotometer:	☐ Hitachi U3000 UV/VIS ☐ Hitachi U3000 UV/VIS
	☐ Hach DR 890
TOC Analyzer:	☐ OI 1020A ☐ OI TOC Analyzer
Turbidimeter:	☐ Hach 2100AN
Other:	☐ Description:

III. Type of Sample/Analytical Anomaly

☒ Values Outside of Control Limits:

1 ☐ Initial Calibration	4 ☐ MB Anomaly	7 ☐ MS RPD
2 ☐ Continuing Calibration Checks	5 ☐ LCS/SRM Recoveries	8 ☒ Sample/LD RPD
3 ☐ SB Spike Recoveries	6 ☐ Sample/LD/LT RSD	9 ☐ MS Spike Recoveries

10 ☐ Holding time exceeded by:
11 ☐ Insufficient sample amount.
12 ☐ Inappropriate storage, container or preservation.
☐ Other

Anomaly Description:
The laboratory triplicate (LT) analysis for particle size distribution (PSD) on sample L48730-1 had a relative standard deviation (RSD) of 48% for the silt category which exceeded the established acceptance limit of 20%.

IV. Type of Project Anomaly

☐ SAP/Work Plan specified MDLs not met.
☐ SAP/Work Plan specified QC frequency or QC type not met.
☐ SAP/Work Plan specified methodology not used.
☐ Sample exceeds regulatory and/or hazardous waste limits.
☐ Sample data results are unusual or inconsistent with expected results.
☐ Other

Anomaly Description:

V. Corrective Action Taken

☐ Sample(s) re-analyzed ☐ Sample(s) re-prepared and re-analyzed
☐ Sample(s) reported "AS IS"
☒ Data qualified with the following flags: *, *J*
☐ Text added:
☐ Other

Corrective Action Description:
The silt category represents a small fraction (approximately 1 to 2%) of the overall sample mass associated with sample L48730-1. Thus, no further corrective action was taken.

The Silt category of L48730-1, WG105297-1 (L48730-1 LD), and WG105297-2 (L48730-1 LT) has been qualified with an "" on the Lab QC Report indicating the RSD result exceeds the acceptance limit. In addition, the Silt category of each of these samples has been qualified with a "J" indicating it is an estimate.*

VI. Potential Effects on Data Quality

Based upon the expected performance of this method:

☒ None; corrective action entirely corrected anomaly (explanation optional):
The silt category represents a small fraction (approximately 1 to 2%) of the overall sample mass associated with sample L48730-1. The elevated RSD result is due to the low contribution from this category to the overall recovery for the sample. Thus, no other data has been qualified. In addition, the impact to the quality of the PSD data for L48730-1, WG105297-1 (L48730-1 LD), and WG105297-2 (L48730-1 LT) is minimal.

☐ Potential effect explanation (explanation mandatory):

	Signatures	Signature Dates
Reported By: *David C Hunn*		
Reviewer: *Casey Maggart*		
Supervisor: *Brian Prosch*		
QA Officer: *Colin Elliott* **(For QA1 only)**		
cc: LPM: *Fritz Grothkopp*		

King County

Water and Land Resources Division
Environmental Laboratory
Department of Natural Resources and Parks
322 West Ewing Street
Seattle, WA 98119-1507
206-684-2300 Fax 206-684-2395
TTY Relay: 711

September 10, 2010

TO: Jo Wilhem
WLRD, Scientific and Technical Support

FROM: Fritz Grothkopp
WLRD, Environmental Laboratory

SUBJECT: Attached Report for Project 421195-180, Mercer Island Sediments
Samples L51278-1, -2, collected July 27, 2010

Attached is the comprehensive report for the sediment samples delivered to the laboratory on July 27, 2010. The samples were analyzed in the Organics, Metals and Conventionals sections of the laboratory. QA/QC data summaries are included for your information.

Conventionals:

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification.

Metals:

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification with the following exceptions. The Relative Percent Difference (RPD) for the Laboratory Duplicate (LD) failed for chromium, copper and lead at 22, 25 and 24% respectively. The chromium, copper and lead results for sample L51278-1 has been flagged with a "J". No other corrective action was taken.

Organics:

The data have passed all internal QA/QC checks for accuracy and completeness and may be used without qualification.

If you have any questions or need additional information, please call me at 684-2327.

King County Environmental Lab Analytical Report

Project:	421195-180	Project:	421195-180
Locator:	MERCERISL10	Locator:	MERCERISL32
Descrip:	SE 22ND ST, NEAR M	Descrip:	CREEK NEAR HOLLYHI
Sample:	L51278-1	Sample:	L51278-2
Matrix:	SE FRSHWTRSED	Matrix:	SE FRSHWTRSED
ColDate:	7/27/10 14:00	ColDate:	7/27/10 14:45
TimeSpan:		TimeSpan:	
TotalSolid:	79.1	TotalSolid:	77.9
ClientLoc:		ClientLoc:	
SampDepth:		SampDepth:	
DRY Weight Basis		**DRY Weight Basis**	

Parameters	Value	Qual	MDL	RDL	Units	Value	Qual	MDL	RDL	Units
CV ASTM D422										
Clay*	1.4	RDL	0.69	1.39	%	1.3	RDL	0.64	1.28	%
Fines*	2.1		0.69	1.39	%	2.6		0.64	1.28	%
Gravel*	41.8		0.14	1.39	%	66.5		0.13	1.28	%
p+0.00*	26.3		0.14	1.39	%	13.3		0.13	1.28	%
p+1.00*	32.1		0.14	1.39	%	9.1		0.13	1.28	%
p+10.0(equal/more than)*		<MDL	0.69	1.39	%	0.6	<RDL	0.64	1.28	%
p+2.00*	4.9		0.14	1.39	%	9.7		0.13	1.28	%
p+3.00*	1.3	<RDL	0.14	1.39	%	3.7		0.13	1.28	%
p+4.00*	0.9	<RDL	0.14	1.39	%	1.2	<RDL	0.13	1.28	%
p+5.00*	0.7	<RDL	0.69	1.39	%		<MDL	0.64	1.28	%
p+6.00*		<MDL	0.69	1.39	%		<MDL	0.64	1.28	%
p+7.00*		<MDL	0.69	1.39	%	1.3	RDL	0.64	1.28	%
p+8.00*		<MDL	0.69	1.39	%		<MDL	0.64	1.28	%
p+9.00*	1.4	RDL	0.69	1.39	%	0.6	<RDL	0.64	1.28	%
p-1.00*	19.3		0.14	1.39	%	25		0.13	1.28	%
p-2.00(less than)*	16.8		0.14	1.39	%	32		0.13	1.28	%
p-2.00*	5.7		0.14	1.39	%	9.5		0.13	1.28	%
Sand*	65.5		0.14	1.39	%	37.1		0.13	1.28	%
Silt*	0.7	<RDL	0.69	1.39	%	1.3	RDL	0.64	1.28	%
CV SM2540-G										
Total Solids*	79.1		0.005	0.01	%	77.9		0.005	0.01	%
MT SW846 3050B*SW846 6010C										
Chromium, Total, ICP	23	J	0.19	0.947	mg/Kg	19.4	J	0.19	0.961	mg/Kg
Copper, Total, ICP	22.1	J	0.25	1.26	mg/Kg	14	J	0.26	1.28	mg/Kg
Lead, Total, ICP	18.2	J	1.3	6.32	mg/Kg	7.38	J	1.3	6.42	mg/Kg
Zinc, Total, ICP	172		0.32	1.58	mg/Kg	114		0.32	1.6	mg/Kg
OR EPA 1664A										
SGT-Hem (oil, nonpolar)	360		126	316	mg/Kg		<MDL	128	321	mg/Kg

King County Environmental Lab Analytical MATRIX Report

Owner: SEEDPAK
Matrix Class: SOLID/TISSUE
User select: DRY Weight Basis

LOCATOR	PROJECT	SAMPLE	*Clay	*Fines	*Gravel	*Sand	*Silt	*p+0.00	*p+1.00	*p+10.0(equal/more than)	*p+2.00	*p+3.00	*p+4.00	*p+5.00	*p+7.00	*p+9.00	*p-1.00	*p-2.00	*p-2.00(less than)	*Total Solids	Chromium, Total, ICP	Copper, Total, ICP	Lead, Total, ICP	Zinc, Total, ICP	SGT-Hem (oil, nonpolar)
			%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	%	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
MERCERISL10	421195-180	L51278-1	1.4	2.1	41.8	65.5	0.7	26.3	32.1		4.9	1.3	0.9	0.7		1.4	19.3	5.7	16.8	79.1	23	22.1	18.2	172	360
MERCERISL32	421195-180	L51278-2	1.3	2.6	66.5	37.1	1.3	13.3	9.1	0.6	9.7	3.7	1.2		1.3	0.6	25	9.5	32	77.9	19.4	14	7.38	114	
* Not converted to dry weight basis																									
If a parameter/analyze appears twice in the column header, it implies that they were analyzed by two different method code																									

King County Environmental Lab Analytical Text Value Report

Project	Sample	Parameter	Textvalue
421195-180	L51278-1	Sample Information	Sand, gravel- few fines
421195-180	L51278-2	Sample Information	Sand, gravel- few fines

Login: P51278

MERCER ISLAND ANNUAL SEDIMENTS

Personnel: J.POWER

Project: 421195-180

CHAIN OF CUSTODY

RELINQUISHED BY	Date	Time
JEAN POWER	7/27/2010	1632
RECEIVED BY	Date	Time
[illegible]	7-27-2010	1630
Sample Number(s) L51278 1+2		(All)

SAMPLENUM	P51278-1	P51278-2	
QC LINK			
LOCATOR	MERCERISL10	MERCERISL32	
Short Loc. Desc.	MERCER10	T_KC_MERCERSED-2	
Locator Desc	SE 22ND ST, NEAR MOUTH	CREEK NEAR HOLLYHILL DRIVE AND W. MERCER	
SITE	KING COUNTY	KING COUNTY	
COMMENTS	sediment	sediment	
Start Date/Time	27-JUL-10/1400	27-JUL-10/1445	
End Date/Time			
Time Span			
Sample Depth			
Dept. Matrix Prod	+ SAMP INFO 3 SE PSD 3 SE TOTS 6 SE CR-ICP 6 SE CU-ICP 6 SE PB-ICP 6 SE ZN-ICP 7 SE SGT-HEM	+SAMP INFO 3 SE PSD 3 SE TOTS 6 SE CR-ICP 6 SE CU-ICP 6 SE PB-ICP 6 SE ZN-ICP 7 SE SGT-HEM	

SAMPLED ADJACENT TO PUMP STATION - LITTLE FINE MATERIAL

SAND, GRAVEL
GREY
NO ODOR

SAMPLED AT + U.S. OF WATER SITE LITTLE FINE MATERIAL

SAND, GRAVEL
W/P DEBRIS
BROWN
NO ODOR

* JP - TELL S.P. THAT STREETLIGHT CLOSEST TO ROAD IS OUT AT N. MERCER ISL. P.S.

* JASON - COLLECT DATE IS INCORRECT IN LIMS

King County Environmental Laboratory Batch Report

Mercer Island SWM, Annual Sediment
L51278

WG110725 PSD

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L51278-1	421195-180	Mercer Island Stormwater Monitoring	CVPSD	FRSHWTRSED	7/27/2010 14:00	23-Aug-10	24-Aug-10		
L51278-2	421195-180		CVPSD	FRSHWTRSED	7/27/2010 14:45	23-Aug-10	24-Aug-10		
WG110725-1	LD		CVPSD	FRSHWTRSED		23-Aug-10	24-Aug-10	WG110725-1, -2	L51278-1
WG110725-2	LT		CVPSD	FRSHWTRSED		23-Aug-10	24-Aug-10		WG110725-1 L51278-1

King County Environmental Laboratory Batch Report

Mercer Island SWM, Annual Sediment
L51278

WG110785 Total Solids

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L51247-1	421240C-300	Freshwater Streams Sediment	CVTOTS	FRSHWTRSED	7/27/2010 11:35	8/16/2010 14:30	8/17/2010 9:42	WG110785-2, -3, -1, -4, -5	
L51247-2	421240C-300		CVTOTS	FRSHWTRSED	7/27/2010 9:20	8/16/2010 14:30	8/17/2010 9:41		
L51247-3	421240C-300		CVTOTS	FRSHWTRSED	7/27/2010 13:05	8/16/2010 14:30	8/17/2010 9:41		
L51247-4	421240C-300		CVTOTS	FRSHWTRSED	7/27/2010 10:15	8/16/2010 14:30	8/17/2010 9:41		
L51247-5	421240C-300		CVTOTS	FRSHWTRSED	7/27/2010 11:00	8/16/2010 14:30	8/17/2010 9:40		
L51247-6	421240C-300		CVTOTS	FRSHWTRSED	7/26/2010 9:45	8/16/2010 14:30	8/17/2010 9:55		
L51247-7	421240C-300		CVTOTS	FRSHWTRSED	7/26/2010 10:35	8/16/2010 14:30	8/17/2010 9:55		
L51247-8	421240C-300		CVTOTS	FRSHWTRSED	7/27/2010 10:05	8/16/2010 14:30	8/17/2010 9:55		
L51247-9	421240C-300		CVTOTS	FRSHWTRSED	7/27/2010 11:05	8/16/2010 14:30	8/17/2010 9:39		
L51247-10	421240C-300		CVTOTS	FRSHWTRSED	7/27/2010 12:49	8/16/2010 14:30	8/17/2010 9:39		
L51278-1	421195-180	Mercer Island Stormwater Monitoring	CVTOTS	FRSHWTRSED	7/27/2010 14:00	8/16/2010 14:30	8/17/2010 9:48	WG110783-1, WG110785-2, -3, -1, -4, -5	
L51278-2	421195-180		CVTOTS	FRSHWTRSED	7/27/2010 14:45	8/16/2010 14:30	8/17/2010 9:48		
L51298-1	421240C-300	Freshwater Streams Sediment	CVTOTS	FRSHWTRSED	7/26/2010 10:20	8/16/2010 14:30	8/17/2010 9:44	WG110785-2, -3, -1, -4, -5	
L51298-2	421240C-300		CVTOTS	FRSHWTRSED	7/26/2010 11:15	8/16/2010 14:30	8/17/2010 9:44		
L51298-3	421240C-300		CVTOTS	FRSHWTRSED	7/26/2010 11:45	8/16/2010 14:30	8/17/2010 9:45		
L51298-4	421240C-300		CVTOTS	FRSHWTRSED	7/26/2010 12:05	8/16/2010 14:30	8/17/2010 9:45		
L51298-5	421240C-300		CVTOTS	FRSHWTRSED	7/26/2010 12:35	8/16/2010 14:30	8/17/2010 9:46		
L51298-6	421240C-300		CVTOTS	FRSHWTRSED	7/26/2010 13:00	8/16/2010 14:30	8/17/2010 9:52		
L51298-7	421240C-300		CVTOTS	FRSHWTRSED	7/26/2010 13:20	8/16/2010 14:30	8/17/2010 9:53		
L51298-8	421240C-300		CVTOTS	FRSHWTRSED	7/26/2010 13:50	8/16/2010 14:30	8/17/2010 9:53		
L51298-9	421240C-300		CVTOTS	FRSHWTRSED	7/26/2010 14:15	8/16/2010 14:30	8/17/2010 9:54		
L51298-10	421240C-300		CVTOTS	FRSHWTRSED	7/26/2010 14:45	8/16/2010 14:30	8/17/2010 9:54		
WG110785-1	MB		CVTOTS	OTHR SOLID		8/16/2010 14:30	8/17/2010 9:40		MB2 8/16/10
WG110785-2	LD		CVTOTS	FRSHWTRSED		8/16/2010 14:30	8/17/2010 9:47	WG110783-1, WG110785-2, -3, -1, -4, -5	L51278-2
WG110785-3	LT		CVTOTS	FRSHWTRSED		8/16/2010 14:30	8/17/2010 9:47		WG110785-2 L51278-2
WG110785-4	LD		CVTOTS	FRSHWTRSED		8/16/2010 14:30	8/17/2010 9:43	WG110785-2, -3, -1, -4, -5	L51247-3
WG110785-5	LT		CVTOTS	FRSHWTRSED		8/16/2010 14:30	8/17/2010 9:43		WG110785-4 L51247-3
WG110783-1	MB		CVTOTS	OTHR SOLID		8/16/2010 14:30	8/17/2010 9:36		MB1 8/16/10

King County Environmental Laboratory Batch Report

Mercer Island SWM, Annual Sediment
L51278

WG110647 Total Metals

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L51278-1	421195-180	Mercer Island Stormwater Monitoring	MTICP-SED	FRSHWTRSED	7/27/2010 14:00	8/12/2010 8:00	8/12/2010 12:36	WG110647-1, -2, -3, -4, -5, -6	
L51278-2	421195-180		MTICP-SED	FRSHWTRSED	7/27/2010 14:45	8/12/2010 8:00	8/12/2010 12:53		
WG110647-1	SB		MTICP-SED	SOLIDBLANK		8/12/2010 8:00	8/12/2010 12:14		WG110647-2 ICPH SPIKE BLANK
WG110647-2	MB		MTICP-SED	SOLIDBLANK		8/12/2010 8:00	8/12/2010 12:20		DIGESTED METHOD BLANK
WG110647-3	LD		MTICP-SED	FRSHWTRSED		8/12/2010 8:00	8/12/2010 12:42		L51278-1 RPD-SOL LAB DUPLICATE
WG110647-4	MS		MTICP-SED	FRSHWTRSED		8/12/2010 8:00	8/12/2010 12:47		L51278-1 ICPH MATRIX SPIKE
WG110647-5	LCS		MTICP-SED	FRSHWTRSED		8/12/2010 8:00	8/12/2010 12:25		BUFFSED M-15-30
WG110647-6	LCS		MTICP-SED	SOIL		8/12/2010 8:00	8/12/2010 12:31		ERASOIL M-10-020

King County Environmental Laboratory Batch Report

Mercer Island SWM, Annual Sediment
L51278

WG110471 Oil, Non-polar

Sample	Project	Project Description	List Type	Matrix	Col. Date	Prep Date	Anal Date	QC Association	Comments
L51278-1	421195-180	Mercer Island Stormwater Monitoring	ORSGT-HEM	FRSHWTRSED	7/27/2010 14:00	8/2/2010 12:00	8/3/2010 0:00	WG110471-1, -2, -3, -4	
L51278-2	421195-180		ORSGT-HEM	FRSHWTRSED	7/27/2010 14:45	8/2/2010 12:00	8/3/2010 0:00		
WG110471-1	MB		ORSGT-HEM	OTHR SOLID		8/2/2010 12:00	8/3/2010 0:00		MB100802
WG110471-2	SB		ORSGT-HEM	OTHR SOLID		8/2/2010 12:00	8/3/2010 0:00		WG110471-1
WG110471-3	SBD		ORSGT-HEM	OTHR SOLID		8/2/2010 12:00	8/3/2010 0:00		WG110471-2
									WG110471-1
WG110471-4	LD		ORSGT-HEM	FRSHWTRSED		8/2/2010 12:00	8/3/2010 0:00		L51278-2

King County Environmental Laboratory Analytical QC Report

Mercer Island SWM, Annual Sediments
L51278

Workgroup: WG110725 PSD

LT:WG110725-2 LD:WG110725-1 L51278-1 Matrix: FRSHWTRSED Listtype: CVPSD Method: ASTM D422 Project: 421195-180
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	LT Value	RSD	Qual	Lab Limit
Clay	0.67	1.35	%	1.4	1.5	1.3			20
Gravel	0.13	1.35	%	41.8	30.7	32.9	17		20
Sand	0.13	1.35	%	65.5	76.7	70.4	8		20
Silt	0.67	1.35	%	0.7	<MDL	0.7			20

King County Environmental Laboratory Analytical QC Report

Mercer Island SWM, Annual Sediments
L51278

Workgroup: WG110785 Total Solids

MB:WG110785-1 Matrix: OTHR SOLID Listtype: CVTOTS Method: SM2540-G Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%	<MDL	

LT:WG110785-3 LD:WG110785-2 L51278-2 Matrix: FRSHWTRSED Listtype: CVTOTS Method: SM2540-G Project: 421195-180
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	77.9	78.1	79.2	1		20

LT:WG110785-5 LD:WG110785-4 L51247-3 Matrix: FRSHWTRSED Listtype: CVTOTS Method: SM2540-G Project: 421240C-300
(Lab Triplicate, Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	LT Value	RSD	Qual	Lab Limit
Total Solids	0.005	0.01	%	48.4	47.7	47.8	1		20

MB:WG110783-1 Matrix: OTHR SOLID Listtype: CVTOTS Method: SM2540-G Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Total Solids	0.005	0.01	%	<MDL	

King County Environmental Laboratory Analytical QC Report

Mercer Island SWM, Annual Sediments
L51278

Workgroup: WG110647 Total Metals

MB:WG110647-2 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
Chromium, Total, ICP	0.14	0.714	mg/Kg	<MDL	
Copper, Total, ICP	0.19	0.952	mg/Kg	<MDL	
Lead, Total, ICP	0.95	4.76	mg/Kg	<MDL	
Zinc, Total, ICP	0.24	1.19	mg/Kg	<MDL	

SB:WG110647-1 MB:WG110647-2 Matrix: SOLIDBLANK Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE
(Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit
Chromium, Total, ICP	0.14	0.714	mg/Kg	<MDL	47.6	47.9	101		85--115
Copper, Total, ICP	0.19	0.952	mg/Kg	<MDL	47.6	48.1	101		85--115
Lead, Total, ICP	0.95	4.76	mg/Kg	<MDL	47.6	47.2	99		85--115
Zinc, Total, ICP	0.24	1.19	mg/Kg	<MDL	47.6	47.3	99		85--115

LD:WG110647-3 L51278-1 Matrix: FRSHWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
Chromium, Total, ICP	0.15	0.75	mg/Kg	18.2	14.5	22	*	20
Copper, Total, ICP	0.2	1	mg/Kg	17.5	13.5	25	*	20
Lead, Total, ICP	1	5	mg/Kg	14.4	11.2	24	*	20
Zinc, Total, ICP	0.25	1.25	mg/Kg	136	114	18		20

MS:WG110647-4 L51278-1 Matrix: FRSHWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: 421195-180
(Matrix Spike)

Parameter	MDL	RDL	Units	SAMP Value	True Value	MS Value	% Rec.	Qual	Lab Limit
Chromium, Total, ICP	0.15	0.749	mg/Kg	18.2	49.9	67.1	98		75--125
Copper, Total, ICP	0.2	0.998	mg/Kg	17.5	49.9	65.3	96		75--125
Lead, Total, ICP	1	4.99	mg/Kg	14.4	49.9	67.2	106		75--125
Zinc, Total, ICP	0.25	1.25	mg/Kg	136	49.9	186	100		75--125

LCS:WG110647-5 Matrix: FRSHWTRSED Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Chromium, Total, ICP	0.6	3.01	mg/Kg	121.9	70	57		40--80
Lead, Total, ICP	4	20	mg/Kg	150	139	92		54--94
Zinc, Total, ICP	1	5.01	mg/Kg	408	367	90		69--109

King County Environmental Laboratory Analytical QC Report

Mercer Island SWM, Annual Sediments
L51278

LCS:WG110647-6 Matrix: SOIL Listtype: MTICP-SED Method: SW846 3050B*SW846 6010C Project: NONE
(Lab Control Sample)

Parameter	MDL	RDL	Units	True Value	LCS Value	% Rec.	Qual	Lab Limit
Chromium, Total, ICP	0.61	3.03	mg/Kg	105	112	107		80--120
Copper, Total, ICP	0.81	4.04	mg/Kg	110	121	110		80--120
Lead, Total, ICP	4	20.2	mg/Kg	144	156	108		80--120
Zinc, Total, ICP	1	5.05	mg/Kg	223	244	109		80--121

King County Environmental Laboratory Analytical QC Report

Mercer Island SWM, Annual Sediments
L51278

Workgroup: WG110471 Oil, non-polar

MB:WG110471-1 Matrix: OTHR SOLID Listtype: ORSGT-HEM Method: EPA 1664A Project:
(Method Blank)

Parameter	MDL	RDL	Units	MB Value	Qual
SGT-Hem (oil, nonpolar)	100	250	mg/Kg	<MDL	

SBD:WG110471-3 SB:WG110471-2 MB:WG110471-1 Matrix: OTHR SOLID Listtype: ORSGT-HEM Method: EPA 1664A Project: NONE
(Spiked Blank Duplicate, Spike Blank, Method Blank)

Parameter	MDL	RDL	Units	MB Value	True Value	SB Value	% Rec.	Qual	Lab Limit	True Value	BD Value	% Rec.	Qual	RPD	Qual	Lab Limit
SGT-Hem (oil, nonpolar)	100	250	mg/Kg	<MDL	1000	790	79		64--132	1000	795	80		1		34

LD:WG110471-4 L51278-2 Matrix: FRSHWTRSED Listtype: ORSGT-HEM Method: EPA 1664A Project: 421195-180
(Lab Duplicate)

Parameter	MDL	RDL	Units	SAMP Value	LD Value	RPD^	Qual	Lab Limit
SGT-Hem (oil, nonpolar)	99.9	250	mg/Kg	<MDL	<MDL			34

Trace Metals Data Anomaly Form

Date(s) Occurred: *8/12/2010*

WG #(s): *WG110647*

☐ **All samples in WKGP(s)** **or** ☒ **Sample #(s):** *L51278-1, L51278-2 and WG110647-3*

Project #(s): *421195-180*

Matrix: ☐ **Liquid** ☒ **Solid** ☐ **QA1** ☐ **QA2** ☐ **Tissue** ☐ **Calibration** ☐ **Other:**

I. Analysis/Digestion

☒ Total ☐ TCLP ☐ Other:
☐ Dissolved ☐ SEM ☐ Subcontracted:

II. Instrument

CVAA-Mercury (☐ M-7500B ☐ M-7500J) CVAF-Mercury ☐
ICP (☐ B ☒ E) ICP-MS (☐ XII-E ☐ X II-O)

III. Type of Sample/Analytical Anomaly

1 ☐ Method Blank (MB) Contamination
2 ☐ Spiked Blank (SB) Recoveries
3 ☐ Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries
4 ☐ MS/MSD Relative Percent Difference (RPD)
5 ☒ Sample/Lab Duplicate (LD) RPD
6 ☐ Laboratory Control Sample/Standard Reference Material (LCS/SRM) Recoveries
☐ Certified values developed by a method other than that which was used for the analysis.

7 ☐ Internal Standard (ISTD) Recoveries
8 ☐ Elements over range:

9 ☐ Field Blank, Equipment Blank or Field/Lab Filter Blank Contamination.
10 ☐ Holding time exceeded by:
11 ☐ Insufficient sample amount.
12 ☐ Inappropriate storage, container, or preservation.
13 ☐ Other

Anomaly Description: *The RPD between background sample L51278-1 and the lab duplicate sample WG110647-3 was outside the 20% control limit for: chromium (22%), copper (25%) and lead (24%).*

IV. Type of Project Anomaly

☐ SAP/Work Plan specified MDLs not met.
☐ SAP/Work Plan specified QC frequency or QC type not met.
☐ SAP/Work Plan specified methodology not used.

☐ Sample exceeds regulatory and/or hazardous waste limits.
☐ Sample data results are unusual or inconsistent with expected results.
☐ Other

Anomaly Description:

V. Corrective Action Taken

☐ Sample(s) re-analyzed
☒ Sample(s) reported "AS IS"
☐ Exposure Deleted
☒ Data qualified with the following flags: **, J*
☐ Other

☐ Sample(s) re-prepared and re-analyzed
☐ Post Digestion Spike(s) (PDS) performed
☐ Serial Dilution(s) (SD) performed

Corrective Action Description: *The sample lab duplicate RPDs for chromium, copper and lead were discussed with the customer, Jo Wilhelm. Due to the heterogeneous nature of these samples, which contain significant amounts of gravel, the decision was made to report the data as is, with qualification. The chromium, copper and lead results for L51278-1, L51278-2 and WG1210647-3 are qualified with a "J" on the Lab Review Report and an "*" on the Lab QC Report.*

VI. Potential Effects on Data Quality (explanation mandatory):

The heterogeneity of the sample may have influenced the sample, resulting in the chromium, copper and lead values being more variable than the method's 20% RPD limit.

	Signatures	Signature Dates
Reported By: Brian Mazikowski	_____	_____
Reviewer: Susannah Rowles	_____	_____
Supervisor: *Kevin Cummings*	_____	_____
QA Officer: *Colin Elliott* **(For QA1 only)**	_____	_____
cc: LPM: Fritz Grothkopp		

Appendix C

Mercer Island Dissolved Zinc and Copper Water Quality Summary 1999-2009

Provided by:

King County Water and Land Resources Division Environmental Laboratory

DISSOLVED ZINC AND COPPER WATER QUALITY

Summary for the City of Mercer Island 1999-2009

October 2009

Prepared by Jo Wilhelm[1], King County Water and Land Resources Division for Patrick Yamashita, City of Mercer Island.

[1] With consultation and/or review from Deb Lester, Dean Wilson, Deb Bouchard, David Batts, and Kate O'Laughlin from the King County Water and Land Resources Division.

Executive Summary

A growing body of scientific literature suggests that dissolved copper (dCu) and dissolved zinc dZn) have the potential to cause adverse effects to wild salmon populations at concentrations below state water quality standards (WQS).

Stormwater sampling has been conducted annually from 1999 through 2009 (except in 2007) at six Mercer Island streams. Basins 10 and 32 consistently experience the highest levels of both dCu and dZn. Copper and zinc concentrations in basin 10 exceeded acute WQS three times during the study period. Copper concentrations in basin 32 have exceeded acute WQS seven times. Zinc concentrations in basin 32 exceeded acute WQS once in 2009. Landuse in basin 32 is primarily residential, but it drains the few commercial businesses located on the south end of Mercer Island. Basin 10 drains the majority of the City of Mercer Island's business district, in addition to residential neighborhoods. Acute WQS for dCu and dZn have not been exceeded in basins 06, 26, 29, and 42, which all have residential landuse. Eighty-eight percent of all dCu concentrations and forty-six percent of all dZn concentrations across all basins were above literature-based threshold concentrations found to cause adverse impacts to salmonid olfaction or behavior (Sandahl et al. 2007 and Sprague 1968).

Suggestions and recommendations to address elevated metal concentrations observed in six Mercer Island streams include:

1) Identify potential sources of dCu and dZn through field inventories or additional water quality sampling. Copper sources include vehicle brake pads, treated wood, pesticides, algicides, and fungicides, architectural copper, and bronze or brass. Zinc sources include vehicle and tire wear and tear, galvanized metals, moss inhibiting chemicals, bronze or brass, and some paints.
2) Implement outreach and educational efforts to encourage more responsible or reduced use of materials and products that are sources of copper and zinc. City policies could be amended to limit use of copper and zinc building materials or other source products.
3) Implement source control best management practices (BMPs) and low impact development (LID) methods for new development and redevelopment projects. Some applicable BMPs include efficient street sweeping, roadside ditch maintenance, or changes in roofing materials. Redevelopment might include use of permeable pavements, vegetated filter strips, or biofiltration swales. A significant source of these metals is likely related to transportation. Diverting runoff from directly discharging to these streams may result in a decrease in metal concentrations.
4) Add sampling, which might yield data that could better inform source control efforts, especially in basins 10 and 32. This additional sampling and analysis effort could include adding the additional water quality parameters required to estimate copper toxicity using the biotic ligand model. It also could include fish sampling to determine the extent of fish use and distribution in Mercer Island streams.

Introduction

The National Oceanic and Atmospheric Administration (NOAA) published a technical memorandum in October 2007 summarizing the sensory effects of dissolved copper (dCu) exposure on juvenile salmonids (Hecht et al. 2007). This report, in addition to other recent studies (e.g., Baldwin et al. 2003, Sandahl et al. 2007, Sprague 1968), contribute to a growing body of literature that suggests dCu and dissolved zinc (dZn) have the potential to limit the productivity and growth potential of wild salmon populations at concentrations below state water quality standards (WQS) outlined in Washington Administrative Code (WAC) 173-201A. In light of this information, the City of Mercer Island requested a summary of their water quality monitoring data for dCu and dZn at six Mercer Island streams collected between 1999 and 2009. This document, presents available data and compares it to WQS or additional literature-based effect thresholds documenting copper and zinc effects on salmonids. Recommendations for addressing elevated levels of dissolved metals in stormwater are provided.

Mercer Island Data Summary

The City of Mercer Island has contracted with the King County Water and Land Resources Division (WLRD) since 1999 to evaluate water quality in six representative basins (basins 06, 10, 26, 29, 32b, and 42) draining to Lake Washington. Grab samples for analysis of dissolved metals, including zinc and copper, were collected during 1-4 storms[2] per year since 1999, with the exception of 2007 when no sampling was conducted. Samples are collected and analyzed following Standard Operating Procedures (King County 2005a and King County 2005b). All samples are processed by the King County Environmental Lab (KCEL) or a certified contract lab. Samples are collected from flowing streams upstream of any backwatering effect from Lake Washington (basin 32) and where applicable, upstream of tightlines (basin 06, 29, 42), heavy armoring (basin 26), or concrete lined channels (basin 10) that outlet to Lake Washington (Figure 1).

[2] For Mercer Island storm events, field staff aimed to collect water samples during storm events that had a three-day pre-storm period with an overall rainfall of 0.25 inches or less. In addition, samples were collected after a particular storm reached a cumulative precipitation threshold: 1) 0.25-0.5 inches of rain in 6 hours; 2) 0.5-0.75 inches of rain in 12 hours; or 3) greater than 1 inch of rain over 24 hours (King County 2008).

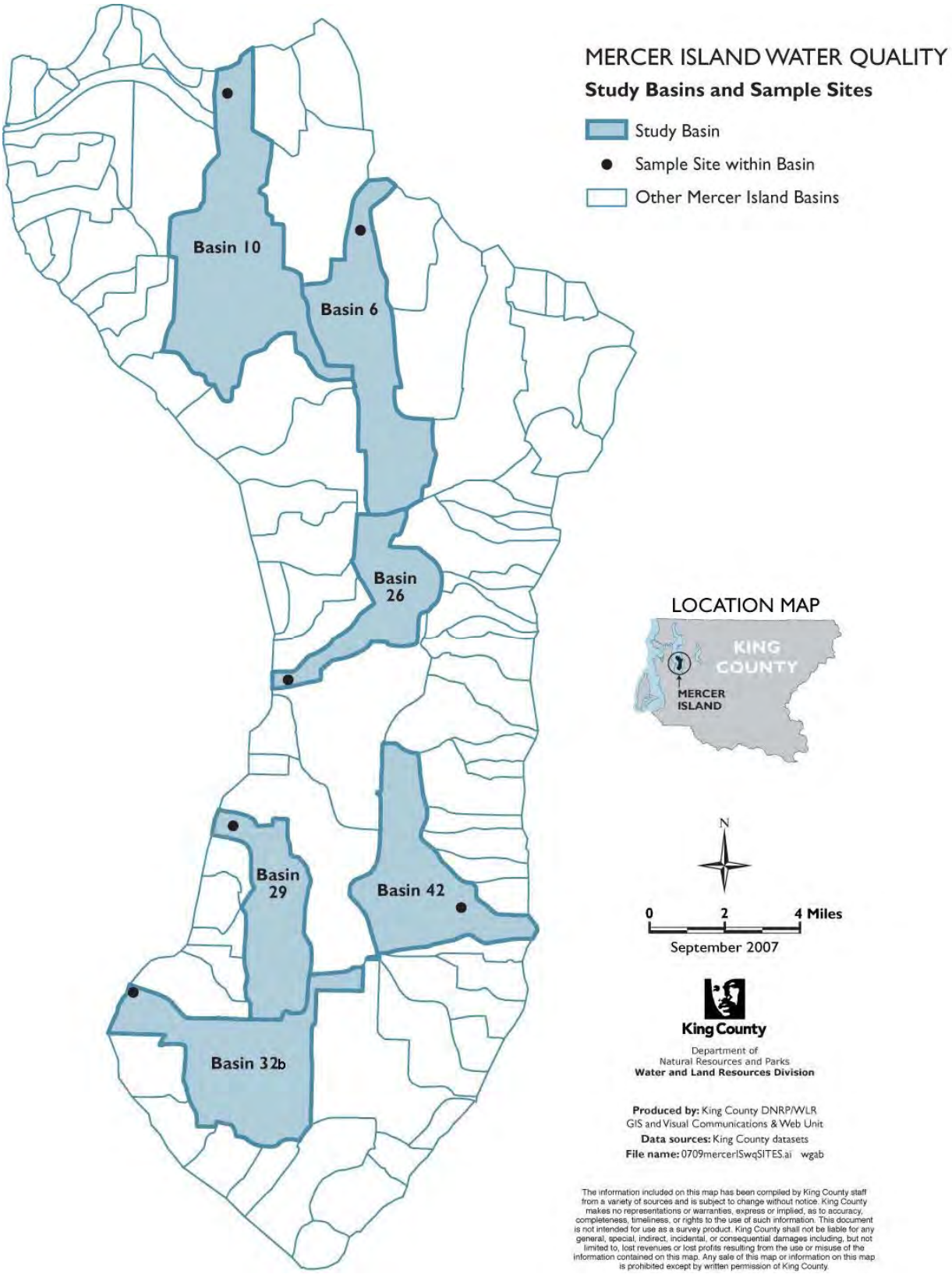


Figure 1. Mercer Island water quality study basins and sample sites.

Relative to basins 06, 26, 29, and 42, elevated levels of dCu and dZn have been detected in basins 10 and 32b, hereafter referred to as basin 32 (Table 1, Figures 2 and 3). The mean dCu for basins 10 and 32 are 4.5 µg/L (range - 1.3 to 7.8 µg/L) and 5.9 µg/L (range - 1.9 to 13.1 µg/L), respectively. Mean dCu concentrations in basins 06, 26, 29, are all less than four µg/L.

Relative to basins 06, 26, 29, and 42, concentrations of dZn in Basins 10 and 32 are also elevated; mean concentrations are 21.2 µg/L (range - 3.2-43.1) and 13.5 µg/L (range -1.6 to 59.8 µg/L), respectively. Mean dZn concentration in Basins 06, 26, 29, and 42 are less than six µg/L. Hardness is also reported here because WQS for both copper and zinc are hardness-dependent (the lower the hardness, the greater the toxicity of the metal to aquatic life). See Appendix A for a summary of the statistical significance of mean concentrations of dCu and dZn between sites.

Table 1. Water hardness (mg/L $CaCO_3$) and dissolved metal (µg/L) concentrations summarized from storm sampling data collected between 1999 and 2009. N represents the number of samples.

	Hardness					Copper					Zinc				
Site	**N**	**Mean**	**St Dev**	**Min**	**Max**	**N**	**Mean**	**St Dev**	**Min**	**Max**	**N**	**Mean**	**St Dev**	**Min**	**Max**
06	30	66.3	30.0	35.5	156	32	2.6	0.9	0.6	4.2	32	5.9	4.6	0.7	24.6
10	33	55.6	35.3	16.8	179	34	4.5	1.4	1.3	7.8	34	21.2	8.2	3.2	43.1
26	26	97.0	49.2	45.9	280	27	2.9	2.1	0.7	12.0	27	2.1	1.2	0.5	5.6
29	15	73.0	29.5	36.3	129	15	3.7	1.7	0.6	6.5	15	3.9	1.7	0.9	6.2
32	25	46.5	26.0	18.4	119	26	5.9	2.6	1.9	13.1	26	13.5	11.9	1.6	59.8
42	16	67.5	20.0	47.0	121	17	3.3	1.4	2.3	7.7	17	3.2	1.4	1.5	6.4

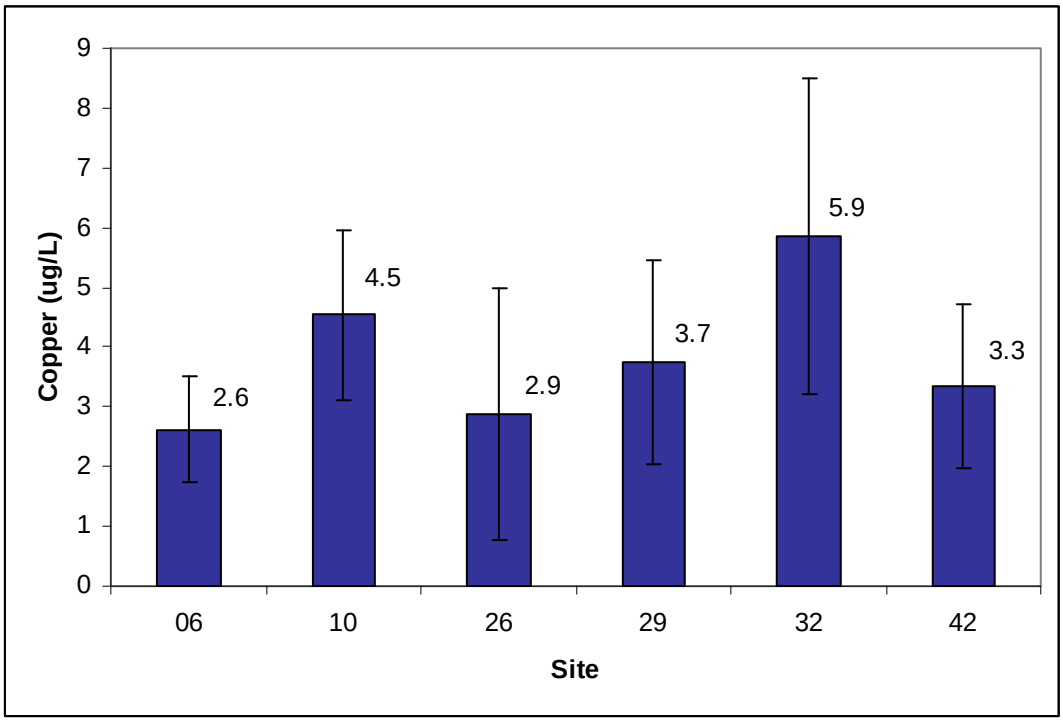


Figure 2. Mean dissolved copper concentrations collected from storm events at six Mercer Island basins between 1999 and 2009. Error bars represent ± one standard deviation.

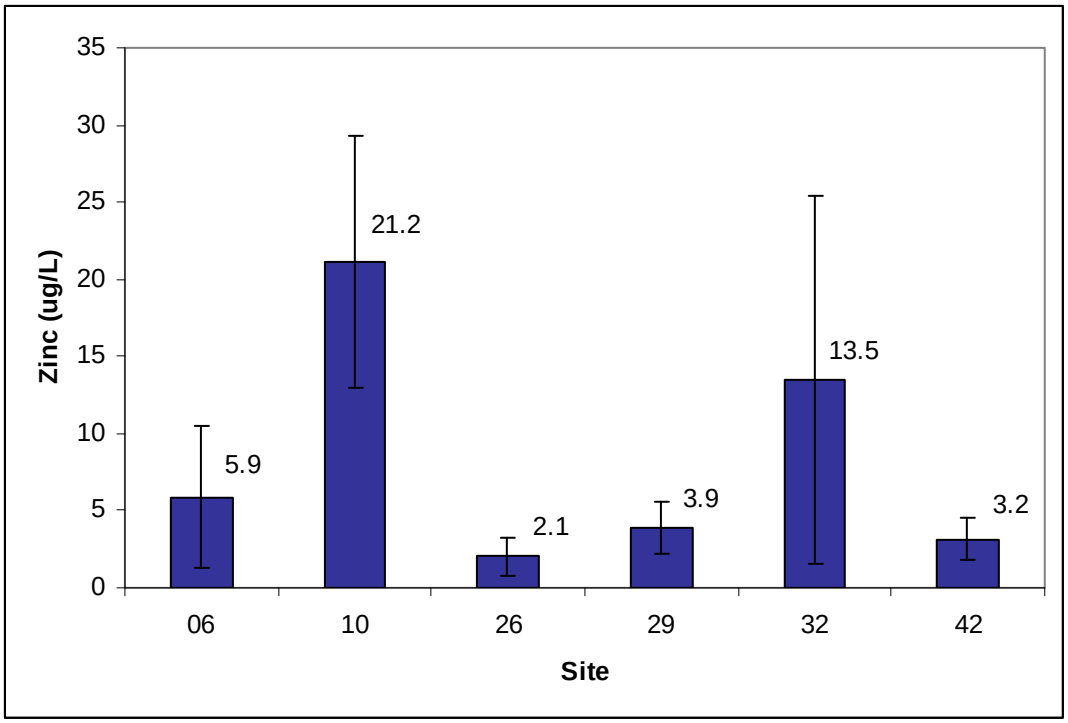


Figure 3. Mean dissolved zinc concentrations collected from storm events at six Mercer Island basins between 1999 and 2009. Error bars represent ± one standard deviation.

Based on the available data, acute WQS for dCu and dZn have not been exceeded in basins 06, 26, 29, and 42 (Appendix B). However, there have been 3 exceedances of acute WQS for both copper and zinc in basin 10; in addition there have been 7 exceedances of acute WQS for copper and 1 for zinc in basin 32 (Table 2). Acute criteria are defined as the "one hour average concentration not to be exceeded more than once every three years on the average" (WAC 173-201A, 2003).

Table 2. Water hardness (mg/L) $CaCO_3$, dissolved metal (µg/L) concentrations, and hardness-adjusted[3] acute Water Quality Standards (WQS) for basins 10 (left) and 32 (right). Highlighted and bold values indicate values exceeding the acute WQS.

Basin 10						Basin 32					
Date	Hard-ness	Cu	Cu Acute WQS	Zn	Zn Acute WQS	Date	Hard-ness	Cu	Cu Acute WQS	Zn	Zn Acute WQS
6/24/1999	90.6	2.93	15.50	16.10	105.26						
10/8/1999	24.3	**7.79**	4.49	**43.10**	34.52						
11/30/1999	29.9	2.24	5.46	16.70	41.15						
2/1/2000	39.1	3.14	7.02	11.40	51.65						
5/3/2000	55.3	4.16	9.74	21.20	69.28						
10/20/2000	51.0	5.54	9.02	27.30	64.69						
11/8/2000	44.9	4.29	8.00	26.10	58.07						
5/14/2001	36.3	6.04	6.55	23.60	48.50	5/14/2001	34.8	**9.15**	6.29	9.52	46.79
6/11/2001	63.7	5.00	11.13	17.20	78.10	6/11/2001	58.0	3.16	10.19	1.60	72.14
8/8/2001	160.0	1.30	26.50	8.25	170.43	8/9/2001	104.0	2.29	17.66	3.96	118.31
11/8/2001	47.0	5.28	8.35	25.10	60.36	11/8/2001	42.2	5.42	7.55	9.24	55.10
3/11/2002	51.9	4.53	9.17	14.90	65.65	3/11/2002	41.7	4.95	7.46	7.91	54.54
8/9/2002	179.0	1.30	29.45	3.15	187.43	8/9/2002	102.0	3.15	17.34	3.47	116.38
10/3/2002	16.8	**6.01**	3.17	**34.10**	25.25	10/3/2002	18.4	**7.95**	3.45	10.60	27.27
12/16/2002	73.0	5.42	12.65	19.10	87.66	12/16/2002	51.8	5.83	9.16	10.30	65.55
3/13/2003	73.7	5.04	12.76	17.00	88.37	3/13/2003	38.3	4.60	6.89	8.11	50.75
10/16/2003	55.3	4.80	9.74	24.00	69.28	10/16/2003	119.0	1.90	20.05	2.87	132.62
11/18/2003	25.9	3.68	4.77	18.40	36.43	11/18/2003	41.6	4.85	7.45	4.68	54.43
3/25/2004	26.2	3.89	4.82	15.80	36.79	3/25/2004	23.5	**8.14**	4.35	22.20	33.55
5/27/2004	34.2	4.95	6.19	15.50	46.11	5/27/2004	29.4	**13.10**	5.37	13.80	40.56
11/2/2004	60.9	2.86	10.66	18.80	75.18	11/2/2004	44.3	6.38	7.90	8.79	57.41
12/8/2004	73.1	5.30	12.67	26.50	87.76	12/8/2004	41.0	4.71	7.35	25.50	53.77
3/26/2005	24.9	4.28	4.59	19.80	35.24	3/26/2005	54.2	5.42	9.56	13.30	68.11
5/10/2005	98.1	3.99	16.71	15.50	112.60	5/10/2005	60.5	9.02	10.60	11.10	74.76
11/3/2005	50.8	5.16	8.99	20.90	64.47	11/3/2005	38.6	5.38	6.94	14.30	51.09
12/22/2005	62.2	6.16	10.88	21.60	76.54	12/22/2005	39.4	5.25	7.08	34.60	51.98
3/8/2006	34.5	3.59	6.24	15.40	46.45	3/8/2006	22.0	**4.33**	4.09	10.70	31.73
11/2/2006	19.4	**5.04**	3.63	**33.10**	28.52	3/8/2006	21.8	**4.40**	4.05	10.80	31.48
12/11/2006	40.7	3.98	7.29	18.40	53.43	11/2/2006	21.4	**11.90**	3.98	20.90	30.99
12/11/2006	44.0	3.95	7.85	17.70	57.08	12/11/2006	36.5	4.68	6.58	11.00	48.72
12/12/2008		4.77	*	40.10	*	12/12/2008		5.81	*	10.90	*
3/14/2009	40.7	6.29	7.29	26.70	53.43	3/14/2009	30.8	5.06	5.61	**59.80**	42.19
3/14/2009	44.6	6.42	7.95	26.50	57.74						
3/28/2009	64.2	5.06	11.21	20.70	78.62	3/28/2009	47.5	5.44	8.44	12.10	60.91

Data analysis by year further suggests that basins 10 and 32 consistently experience some of the highest levels of both dCu and dZn (Figures 4 and 5). Basin 32 had the highest mean dCu concentration (8.0 µg/L dCu in 2004). Landuse in basin 32 is primarily residential, but it also drains the few commercial businesses located on the south end of Mercer Island. Basin 10

[3] The WQS are adjusted based on hardness using the following calculation: $(0.960)(e^{(0.9422[\ln(\text{hardness})] - 1.464)})$ as defined in WAC 173-201A. Metals are generally less toxic in harder water.

drains the majority of the City of Mercer Island's business district, in addition to single- and multi-family residential neighborhoods.

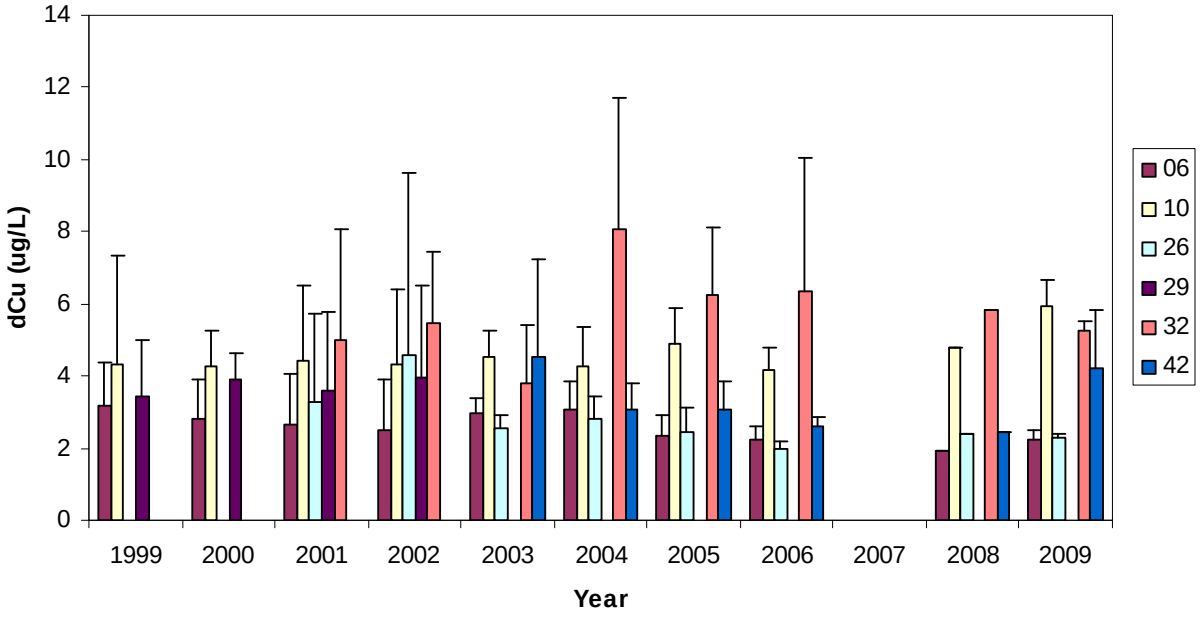


Figure 4. Dissolved copper concentration by year at six Mercer Island basins between 1999 and 2009. Between one and four samples were collected each year. Basins 10 and 32 consistently have the highest concentrations of dissolved copper relative to the other basins. Error bars represent ± one standard deviation.

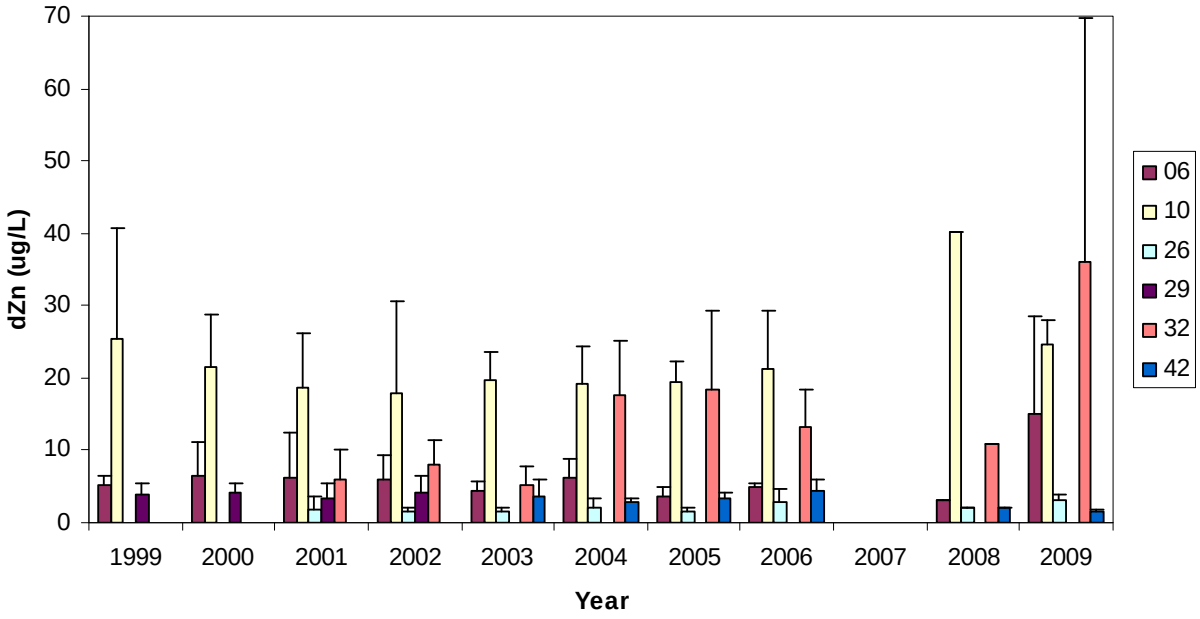


Figure 5. Dissolved zinc concentration by year at six Mercer Island basins between 1999 and 2009. Between one and four samples were collected each year. Basins 10 and 32 consistently have the highest concentrations of dissolved zinc relative to the other basins. Error bars represent ± one standard deviation.

Sediment samples for analysis of metals have been collected annually in each of the basins. These data provide information to supplement the stormwater quality data. Sediment copper concentrations did not exceed freshwater sediment guidelines in any of the basins. However, sediment zinc concentrations in basin 10 exceeded the threshold effects level (Smith et al. 1996) in 1999, 2000, 2001, and 2005 (See Appendix C for the sediment results).

While only a handful of the water samples exceeded WQS for dCu or dZn, a growing body of literature suggests that fish behavior, particularly in salmonids, can be impacted by exposures to concentrations of dCu and dZn below WQS. Sprague (1968) demonstrated a threshold avoidance level of 5.6 μg/L of dZn for rainbow trout. Baldwin et al. (2003) found that exposure to dCu levels at 3 μg/L above the 3 μg/L present in the experimental test waters caused impact to coho olfaction. Sandahl et al. (2007) demonstrated sensory physiology and predator avoidance behaviors in coho at dCu concentrations as low as 2 μg/L. Hecht et al. (2007) used the thresholds reported in these papers to calculate benchmark concentrations for dCu. Benchmark concentrations ranged from 0.18-2.1 μg/L for predator avoidance behavior and 0.59-2.1 μg/L for olfactory responses. These benchmark concentrations represent increases in the dCu concentration above ambient levels less than or equal to 3 μg/L. All of these studies look only at one contaminant. They do not take into account additive or synergistic effects that an organism is likely exposed to in its aquatic habitat.

The National Marine Fisheries Service (NMFS) is utilizing effect thresholds lower than state WQS in their ESA Section 7 consultations with federal, state, and local governments (Landino 2008). NMFS recommends keeping dCu below 2.0 μg/L over ambient levels[4] of 3.0 μg/L or less and dZn below 5.6 μg/L over ambient levels between 3 and 13.0 μg/L by infiltrating or dispersing treated stormwater so that the volume and frequency of discharges affects only a few feet of in-water habitat. Comparing these values to the Mercer Island data, eighty-eight percent of all dCu concentrations across all basins were greater than 2 μg/L and forty-six percent of all dZn concentrations exceeded 5.6 μg/L.

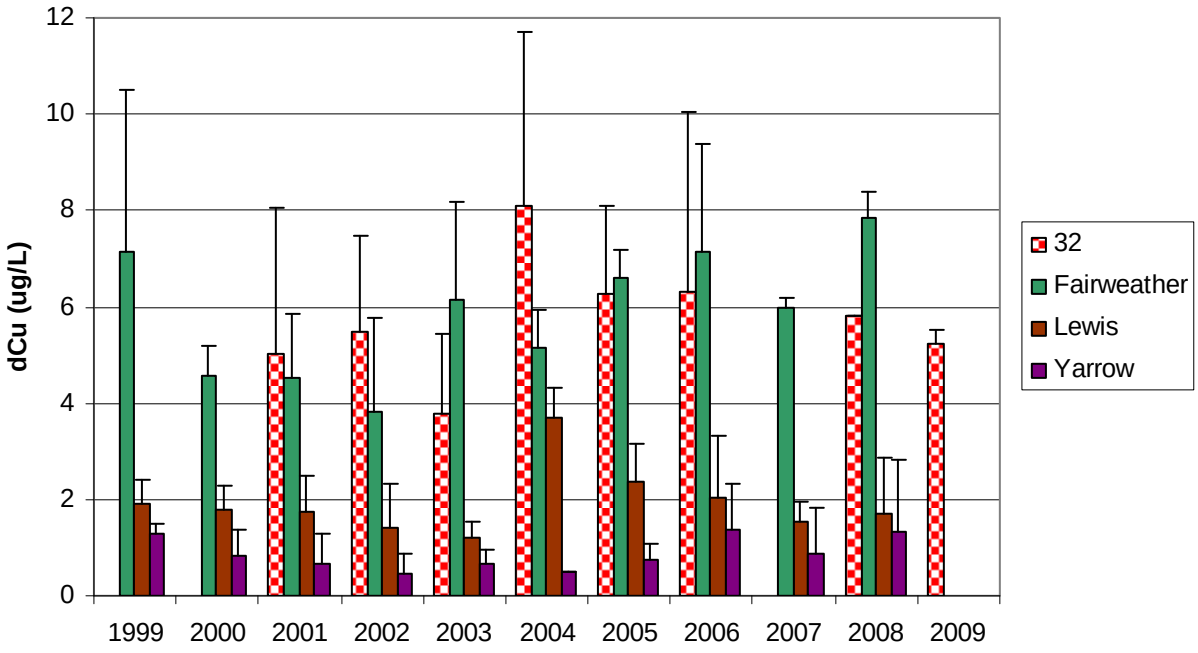
Regional Comparisons

Regional comparisons to other urbanized basins were conducted to better understand the relative scale of water quality issues in Mercer Island study basins. Five regional streams that have been monitored since at least 1999 as part of King County's Stream Monitoring Program were selected for comparison. These streams have similar land use to those monitored on Mercer Island. However, these regional streams are generally larger systems with greater bank width and higher free-flowing hydrologic regimes that often support anadromous fishes and other species. In contrast, the Mercer Island streams are smaller, periodically tight-lined, and typically do not support migratory salmonids. In addition, wet-weather sampling criteria for the King County Stream Monitoring Program (greater than 0.25 inches rainfall over 24 hours with a minimum 24-hour antecedent dry period (King County 2002)) were slightly less stringent than the storm sampling criteria for the Mercer Island program (three day pre-storm period with less than 0.25 inches of rain and a cumulative precipitation of at least 0.25 inches over 6 hours, 0.5 inches over 12 hours, or 1 inch over 24 hours (King County 2008)). As a result of the baseflow and sampling criteria differences, the Mercer Island streams are likely to be more stormwater dominated during storm events than the regional streams.

[4] The ambient levels of dissolved metals in Mercer Island streams are not known. To date, all data collected is from storm events, therefore dry or summer baseflow metals levels are not known.

Idyllwood Creek, which flows into Lake Sammamish and Thornton Creek, which flows into Lake Washington, were categorized as "commercial" for comparison with basin 10. Fairweather, Lewis, and Yarrow creeks were categorized as "residential with erosive ravines" for comparison with basins 06, 26, 29, 32, and 42. For more information about these streams and past sampling that has been conducted, refer to the King County Streams site (http://www.kingcounty.gov/environment/data-and-trends/monitoring-data/streams.aspx).

Fairweather Creek and basin 32[5] typically had the highest dCu concentrations when compared to other residential basins (Figure 6). Basin 32 has consistently experienced elevated dZn concentrations since 2004 compared to other residential basins. See Appendix D for details on the statistical significance of these comparisons.



[5] Basin 32 is primarily residential, however it does have a small commercial area at its upstream extent.

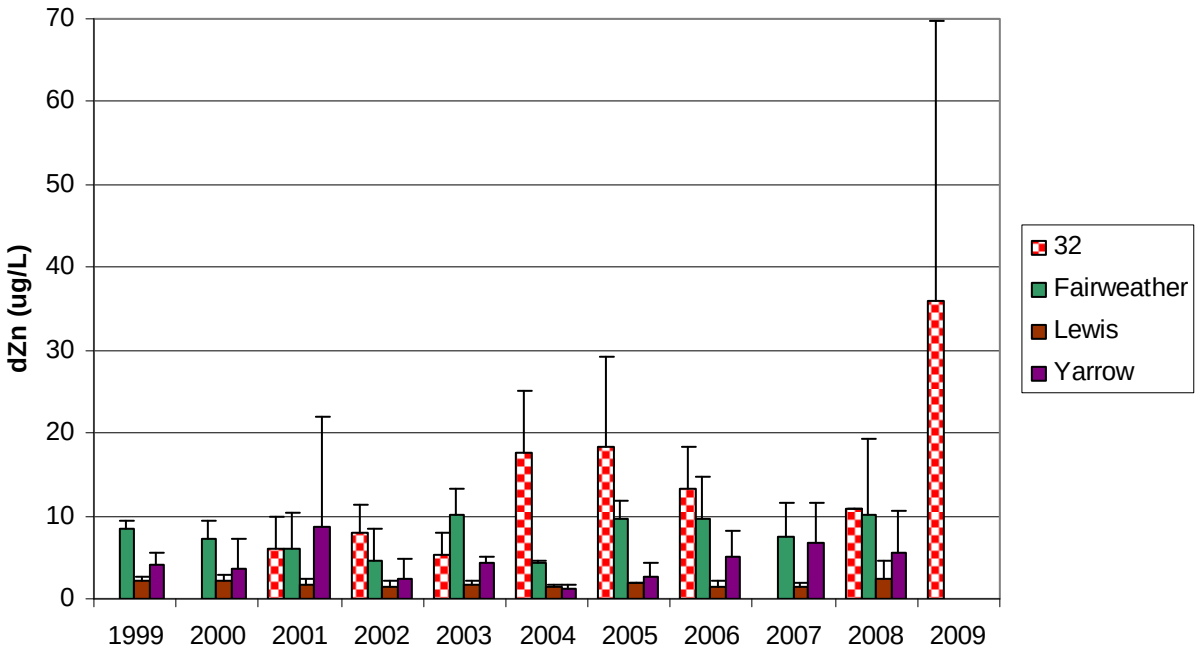


Figure 6. Dissolved copper (top) and zinc (bottom) concentrations by year at basin 32 compared to three regional streams dominated by residential landuse. Error bars represent ± one standard deviation. Both dCu and dZn concentrations for basin 32 were significantly higher than Lewis and Yarrow Creeks.

Basin 10 experiences elevated concentrations of dCu and dZn compared to two other regional basins dominated by commercial development (Figure 7). The mean annual metal concentrations in basin 10 were statistically higher when compared to concentrations in Idyllwood and Thornton Creeks (Appendix D).

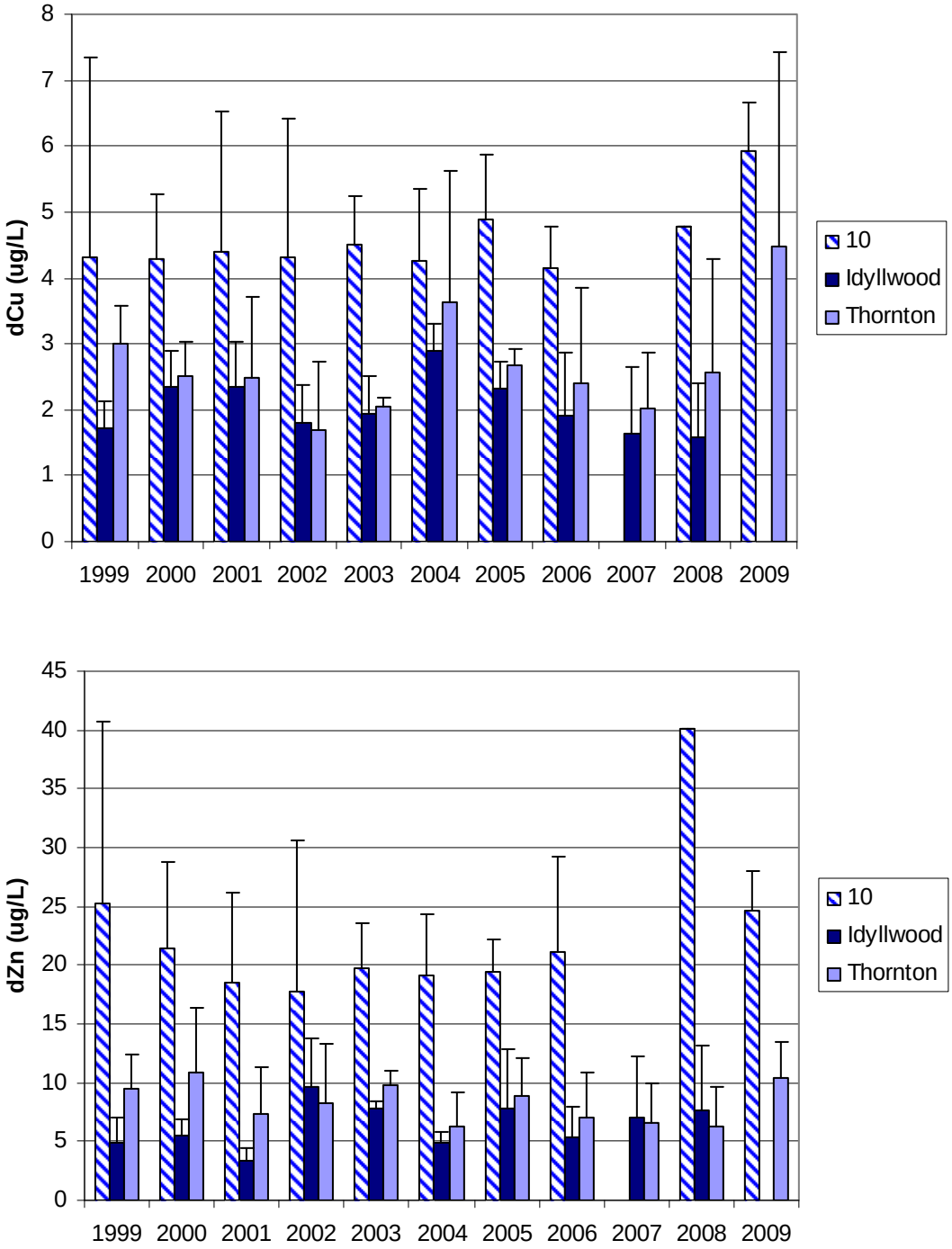


Figure 7. Dissolved copper (top) and zinc (bottom) concentrations by year at basin 10 and two regional stream locations with commercial landuse. Error bars represent ± one standard deviation. Both dCu and dZn concentrations for basin 10 were statistically higher than Idyllwood and Thornton Creeks.

Implications for Aquatic Life in Mercer Island Basins

The 6 study streams on Mercer Island do not support spawning adult salmon populations, and likely have limited geographic distribution of rearing juvenile salmonid populations, mostly

immediately upstream of their confluence with Lake Washington mouths (personal communication with Kollin Higgins, King County DNRP, 9/23/2009). Most of these streams have seasonal hydrology, steep gradients, and both natural and artificial barriers that prevent fish access. However, in 2002 the Watershed Company surveyed some of Mercer Island's streams to help refine the City's Geographic Information System (GIS). They classified streams using the Washington State Department of Natural Resources (DNR) interim water typing system (WAC 222-16-031 2001) and made site visits which included potential fish use interpretations based on direct observations, conversations with fish professionals, or best professional judgment (Watershed Company 2003). Basin 29 was described as having fish at the mouth and basin 32 was described as having good fish access at the mouth and good conditions for coho use throughout the downstream extent. Both basins 10 and 26 had barriers near the downstream end, which prevented fish access. Basins 06 and 42 were not evaluated for fish use due to pipes at the downstream end. (See Appendix E for more information regarding the Watershed Company study). If fish frequent the mouths of these streams, exposure to elevated dCu and dZn levels, especially in basin 32 where good coho habitat has been documented, could potentially cause adverse effects to these fish populations. Copper is also highly toxic at low concentrations to aquatic macroinvertebrates and primary producers and therefore elevated concentrations may influence the entire aquatic food web (EPA 2007).

Conclusions, Recommendations, and Potential Next Steps

Water quality sampling from 1999 to 2009 at 6 Mercer Island streams has identified two basins where dCu and dZn levels occasionally exceed state WQS. In addition, dCu and dZn levels in all 6 streams frequently exceed concentrations that may have potential adverse impacts on fish olfaction and behavior. Source control efforts to decrease metal concentrations particularly in basins 10 and 32 and to a lesser extent in basins 06, 26, 29, and 42 could reduce the potential risk to fish and aquatic life associated with exposure to chronic, acutely toxic, and sub-lethal concentrations of metals such as copper and zinc.

The following provides some suggestions and recommendations to address these elevated metal concentrations:

1) Identify potential sources of dCu and dZn via field reconnaissance and inventories (for use of lawn care products, roofing materials, etc), or additional water testing (add sampling locations at tributary mouths or downstream of potential source areas to try to isolate the contributing areas for elevated dissolved metals).
    a. Copper sources include:
        i. Vehicle brake pads
        ii. Treated wood
        iii. Pesticides, algicides, and fungicides used on crops and lawns, on roofs to reduce mildew and rotting, and in swimming pools, wetlands and lakes to control algal and plant growth
        iv. Architectural copper including copper roofs, drain pipes, flashing and decorative copper
        v. Bronze or brass which might be used in light posts, light fixtures, fencing ornamentation, sculptures, or outdoor plumbing fixtures
    b. Zinc sources include:
        i. Vehicle wear and tear
        ii. Vehicle tires
        iii. Galvanized metals including roofing, gutters, flashing, downspouts, guardrails, and light posts
        iv. Some other roofing products may contain zinc for moss inhibition

v. Bronze or brass structures and fixtures (see above under copper sources)
vi. Some paints

2) Based on source identification results regarding lawn care product use, driving habits, architectural materials, and driving and vehicle washing habits, implement outreach and educational efforts to encourage more responsible or reduced use of these materials and products. In addition, encourage reduced driving and coating of copper to reduce releases. City policies could be amended to limit use of copper and zinc building materials and zinc or copper containing moss killer or pesticides[6].
3) Implement source control BMPs and low impact development (LID) methods for new development and redevelopment projects as recommended by the 2005 DOE Stormwater Manual for Western Washington (DOE 2005) or other sources. Some possible applicable BMPs include efficient street sweeping, roadside ditch maintenance, or changes in roofing materials. Redevelopment might include use of permeable pavements[7], vegetated filter strips, or biofiltration swales, which improve infiltration and stormwater pollutant control. A significant source of these metals is likely related to transportation. Diverting runoff from directly discharging to these streams may result in a decrease in metal concentrations.
4) If source control measures are not effective over time, the 2005 DOE Stormwater Manual for Western Washington (DOE 2005) and the 2009 King County Surface Water Design Manual (King County 2009) are resources which describe stormwater facilities that might help reduce zinc and copper levels. However, since Mercer Island is already largely developed and dissolved metal concentrations only periodically exceed state WQS, facilities may not be logistically feasible or warranted. Constructed wetlands, wet ponds, biofiltration, sand filters, compost filters, and infiltration facilities can contribute to removing dissolved metals, however little data is currently available to document facility success. With effectiveness monitoring increasingly required, more information should be available in coming years to help direct stormwater cleanup efforts more effectively.

The following outlines additional sampling which might yield data that could better inform source control efforts, especially in basins 10 and 32:

5) Consider expanding sampling to include the parameters required to use the biotic ligand model (BLM) to estimate copper toxicity[8]. The BLM serves as the basis for the new national recommended copper criteria defined by the EPA in 2007 (EPA 2007)[9]. Compared to a hardness-based criteria, the BLM-based criteria is customized to the particular water under consideration.
6) Determine the extent of fish use and distribution in Mercer Island streams, expanding on the information presented in the Watershed Company's 2002 stream typing

[6] In January 2003, Palo Alto, California adopted an ordinance prohibiting the use of copper-containing roofing materials, shingles, and gutters in new buildings and prohibiting their use for replacement of roofs (Palo Alto 2003).
[7] Permeable pavements require periodic vacuuming. The Netherlands are experimenting with permeable pavement strips on the edges of roads (personal communication with David Batts, King County DNRP, 10/17/09).
[8] The BLM was developed as an operational model of metal bioavailability and toxicity and is suitable for use in evaluating differences in the availability and toxicity of metals such as copper, differences that occur as a result of changes in water chemistry from site to site, and at a given site over time. The BLM requires several water quality parameters to estimate copper toxicity including temperature, pH, dissolved organic carbon (DOC), major cations (Ca, Mg, Na, and K), major anions, (SO_4 and Cl), and alkalinity.
[9] Changes to the state WQS are not anticipated in the near futures.. When changes are made, it is unclear whether Washington will continue with a hardness-dependent criteria or propose using the BLM (personal communication with Cheryl Niemi, WA DOE, 10/20/2009).

(Appendix E). Initial sampling efforts should focus on basins 10 and 32 where dissolved metals exceedances have been documented.

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Appendix A – Statistical Significance of Mean Basin Concentrations of Dissolved Copper and Zinc

dCu and dZn data were natural log transformed to approach a normal distribution. One-way analysis of variance testing (ANOVA) results suggest that the means between sites were significantly different ($\alpha \leq 0.05$). We used a Tukey multiple comparisons post-hoc test to compare pairwise means (Table A-1) with $\alpha \leq 0.05$, $\beta \leq 0.2$, and $\Delta \geq 25\%$[10].

Basin 32's mean dCu concentration is statistically significant from all other basins except basin 10. Despite an elevated mean compared to most of the sites, basin 10's mean dCu concentration is only statistically different from basin 06 and 26.

Table A-1. Significance levels of Tukey multiple comparison tests comparing mean dCu (left) and mean dZn (right) concentrations at each of six Mercer Island basins. Cells highlighted in yellow are significant at the $\alpha \leq 0.05$ level.

Copper

Site	06	10	26	29	32	42
06		0.000	1.000	0.406	0.000	0.423
10			0.000	0.349	0.413	0.248
26				0.477	0.000	0.498
29					0.010	1.000
32						0.005
42						

Zinc

Site	06	10	26	29	32	42
06		0.000	0.000	0.605	0.000	0.132
10			0.000	0.000	0.002	0.000
26				0.013	0.000	0.087
29					0.000	0.981
32						0.000
42						

[10] The delta in comparing sites 29 and 42 for dCu with their smaller sample sizes and relatively close means, will only support a delta of 25% or greater.

Appendix B – Hardness, dCu, and dZn data for basins 06, 26, 29, and 42

Basins 06, 26, 29, and 42 have never had any acute WQS exceedances (Tables B-1, B-2, and B-3). See Table 2 within the body of the report for basin 10 and 32 results.

Table B-1. Water hardness (mg/L) $CaCO_3$, dissolved metal (µg/L) concentrations, and hardness-adjusted acute Water Quality Standards (WQS) for Basins 06 (left) and 26 (right). No values were greater than acute WQS.

Basin 06						Basin 26					
Date	Hard-ness	Cu	Cu Acute WQS	Zn	Zn Acute WQS	Date	Hard-ness	Cu	Cu Acute WQS	Zn	Zn Acute WQS
10/8/1999	47.5	4.03	8.44	6.13	60.91						
11/30/1999	52.1	2.32	9.21	4.29	65.87						
2/1/2000	48.8	2.73	8.66	7.62	62.32						
5/3/2000	78.5	1.40	13.55	2.00	93.22						
10/20/2000	77.9	3.98	13.45	3.85	92.62						
11/8/2000	52.8	3.20	9.32	12.50	66.62						
5/14/2001	62.3	2.94	10.90	14.70	76.64	5/14/2001	126.0	1.80	21.16	0.54	139.20
6/11/2001	64.3	2.71	11.22	2.20	78.72	6/11/2001	71.5	6.38	12.40	4.64	86.13
8/8/2001	156.0	0.78	25.87	0.70	166.82	8/8/2001	140.0	0.80	23.36	0.63	152.20
11/8/2001	67.4	4.15	11.73	6.78	81.93	11/8/2001	280.0	4.04	44.89	1.50	273.83
3/11/2002	35.5	2.35	6.41	8.12	47.59	3/11/2002	80.5	2.70	13.87	2.40	95.23
8/9/2002	142.0	0.62	23.68	0.89	154.04	8/9/2002	139.0	0.72	23.21	0.80	151.28
10/3/2002	40.4	2.96	7.24	7.67	53.10	10/3/2002	95.9	12.00	16.36	1.30	110.46
12/16/2002	75.3	3.97	13.03	7.26	89.99	12/16/2002	91.6	2.83	15.67	1.60	106.25
3/13/2003	73.9	3.43	12.80	5.92	88.57	3/13/2003	70.3	2.89	12.21	1.60	84.90
10/16/2003	118.0	2.85	19.89	4.19	131.68	10/16/2003	101.0	2.21	17.18	2.00	115.42
11/18/2003	84.2	2.55	14.47	3.06	98.93	11/18/2003	191.0	2.61	31.31	0.82	198.03
3/25/2004	36.0	2.29	6.50	9.63	48.16	3/25/2004	66.5	2.54	11.59	1.20	81.00
5/27/2004	60.3	3.30	10.57	3.22	74.55	5/27/2004	78.4	3.42	13.53	1.20	93.12
11/2/2004	62.4	4.09	10.91	6.56	76.75	11/2/2004	75.1	3.23	12.99	3.55	89.79
12/8/2004	61.7	2.63	10.80	5.43	76.02	12/8/2004	78.4	2.06	13.53	2.79	93.12
3/26/2005	46.8	2.58	8.32	4.88	60.15	3/26/2005	71.9	3.42	12.47	2.10	86.54
5/10/2005	110.0	1.80	18.62	1.80	124.07	5/10/2005	103.0	2.05	17.50	1.50	117.35
11/3/2005	56.5	3.04	9.94	4.24	70.55	11/3/2005	63.0	2.28	11.01	0.98	77.37
12/22/2005	45.0	2.00	8.02	3.33	58.18	12/22/2005	58.3	2.11	10.23	1.60	72.45
3/8/2006	35.5	2.00	6.41	5.37	47.59	3/8/2006	53.4	2.26	9.42	2.00	67.26
11/2/2006	52.5	2.66	9.27	5.02	66.30	11/2/2006	111.0	1.80	18.77	2.30	125.03
12/11/2006	40.8	2.13	7.31	4.73	53.54	11/2/2006	109.0	1.80	18.46	1.30	123.12
12/12/2008		1.90	*	3.02	*	12/11/2006	45.9	2.03	8.17	5.64	59.16
12/12/2008		1.90	*	2.97	*	12/12/2008		2.41	*	2.00	*
3/14/2009	45.0	2.41	8.02	5.33	58.18	3/14/2009	64.1	2.20	11.19	3.97	78.52
3/28/2009	58.3	2.09	10.23	24.60	72.45	3/28/2009	79.4	2.41	13.69	2.70	94.13
						3/28/2009	77.4	2.31	13.37	2.73	92.12

* no hardness data collected, therefore WQS cannot be calculated.

Appendix B (continued)

Table B-2. Water hardness (mg/L) $CaCO_3$, dissolved metal (µg/L) concentrations, and hardness-adjusted acute Water Quality Standards (WQS) for basin 29. No values were greater than acute WQS. Basin 29 was removed from the Mercer Island Water Quality sampling program after 2002 and replaced with basin 42 (see table A-3).

Basin 29					
Date	Hard-ness	Cu	Cu Acute WQS	Zn	Zn Acute WQS
6/24/1999	82.9	2.46	14.26	3.26	97.63
10/8/1999	46.7	5.25	8.30	5.76	60.04
11/30/1999	46.2	2.65	8.22	2.98	59.49
2/1/2000	56.5	4.00	9.94	4.84	70.55
5/3/2000	57.2	2.91	10.05	1.90	71.29
10/20/2000	55.5	4.61	9.77	4.02	69.49
11/8/2000	54.8	4.06	9.65	5.37	68.75
5/14/2001	87.8	2.96	15.05	3.38	102.50
6/11/2001	55.1	4.40	9.70	5.53	69.07
8/9/2001	123.0	0.87	20.68	0.97	136.39
11/8/2001	129.0	6.07	21.63	4.03	142.01
3/11/2002	71.0	3.44	12.32	6.15	85.62
8/9/2002	117.0	0.64	19.73	0.88	130.73
10/3/2002	36.3	6.53	6.55	3.83	48.50
12/16/2002	76.6	5.19	13.24	5.51	91.31

Appendix B (continued)

Table B-3. Water hardness (mg/L) $CaCO_3$, dissolved metal (µg/L) concentrations, and hardness-adjusted acute Water Quality Standards (WQS) for basin 42. No values were greater than acute WQS. Basin 42 was only added to the Mercer Island Water Quality sampling program in 2003 after basin 29 was removed (see Table B-2).

Basin 42					
Date	**Hard-ness**	**Cu**	**Cu Acute WQS**	**Zn**	**Zn Acute WQS**
3/13/2003	49	2.68	8.69	2.40	62.53
10/16/2003	74.3	7.66	12.86	6.38	88.98
11/18/2003	70.3	3.22	12.21	2.00	84.90
3/25/2004	54.6	2.55	9.62	2.20	68.54
5/27/2004	62.2	3.45	10.88	2.40	76.54
11/2/2004	121	3.93	20.36	3.55	134.51
12/8/2004	92	2.33	15.73	2.99	106.64
3/26/2005	52.5	4.18	9.27	2.54	66.30
5/10/2005	86.8	2.73	14.89	4.36	101.51
11/3/2005	51.5	2.87	9.11	3.30	65.23
12/22/2005	53	2.43	9.36	3.10	66.83
3/8/2006	47	2.39	8.35	5.30	60.36
11/2/2006	84.3	2.91	14.49	2.75	99.03
12/11/2006	57.6	2.55	10.12	5.34	71.72
12/12/2008		2.44	*	2.00	*
3/14/2009	60.8	5.36	10.65	1.70	75.08
3/28/2009	63.3	3.10	11.06	1.50	77.68

* no hardness data collected, therefore WQS cannot be calculated.

Appendix C – Mercer Island Freshwater Sediment Data: Total Zinc and Total Copper

Sediment tends to move more slowly through a system than water and as a result, sediment chemistry can provide insight into water quality issues periodic water sampling might miss. Effects of sediment metal levels on salmonids have not been widely studied, but these data provide context to the water column dissolved metals data presented in the body of the report. See the 2006 Mercer Island Annual Report for more information on sampling methods and data interpretation.

Table C-1. Suggested freshwater sediment quality guidelines (mg/kg)

Metal	Threshold Effects Level[1]	Probable Effects Level[1]	Sediment Quality Standard[2]	Cleanup Screening Level[2]
Copper	35.7	196.6	80	830
Zinc	123.1	314.8	140	160

[1]Smith et al. 1996

[2]Avocet 2003

Table C-2. Sediment metal concentrations (mg/kg) of total copper and total zinc at six Mercer Island basins between 1999 and 2008. Sediment metals were collected once a year. Bolded and highlighted values exceed the threshold effects level (Smith et al. 1996) sediment quality guidelines.

Site	Date	Total Copper	Total Zinc
10	6/24/99	20.1	**131**
29	6/24/99	11.7	54.8
06	10/8/99	6.51	29.4
10	10/8/99	12.9	119
29	10/8/99	11	42.3
06	10/20/00	7.03	32
10	10/20/00	14	**126**
29	10/20/00	9.76	40.1
06	8/8/01	6.46	27.3
10	8/8/01	15.4	**129**
29	8/9/01	8.25	34
26	8/8/01	7.62	23.4
32	8/9/01	10.5	64.8
06	8/9/02	5.47	31
10	8/9/02	26.2	90.1
29	8/9/02	11.2	39.5
26	8/9/02	8.3	25.6
32	8/9/02	12.4	64.6
06	9/18/03	5.22	28.7
10	9/18/03	13.3	120
42	9/18/03	6.47	29.8
26	9/18/03	9.6	27.9
32	9/18/03	6.68	34.6
42	9/18/03	9.04	33.3
06	9/22/04	5.54	25.3
10	9/22/04	12.8	121
26	9/22/04	8.52	26.6
32	9/22/04	8.52	48.6
42	9/22/04	7.76	28.6
06	9/9/05	5.49	28.7
10	9/9/05	16.9	**211**
42	9/9/05	7.42	38.8
26	9/9/05	10.2	30.8
32	9/9/05	11.2	59.8
06	8/10/06	6.74	32.9
10	8/10/06	19.4	76.3
42	8/10/06	7.73	35.3
26	8/10/06	7.96	25
32	8/10/06	9.16	54
06	12/30/08	11.6	43.3
10	12/30/08	15.3	122
42	12/30/08	8.94	27.8
26	12/30/08	7.07	28.3
32	12/30/08	13.1	84.4

Appendix D – Statistical Significance of Mean Basin Concentrations of Dissolved Copper and Zinc Compared to Regional Streams

dCu and dZn data were natural log transformed to approach a normal distribution. One-way analysis of variance testing (ANOVA) results suggest that the means between sites were significantly different ($\alpha \leq 0.05$). We used a Tukey multiple comparisons post-hoc test to compare pairwise means with $\alpha \leq 0.05$, $\beta \leq 0.2$, and $\Delta \geq 25\%$.

Basin 32's mean dCu concentration is statistically different from Yarrow and Lewis Creeks in addition to Mercer Island sites 06 and 26 (Table D-1). Basin 32's mean dZn concentration is statistically different from all other residential sites except Fairweather creek (Table D-2).

Table D-1. Significance levels of Tukey multiple comparison tests comparing dissolved Copper concentrations at five Mercer Island streams and three regional streams all with predominantly residential landuse. Values highlighted in yellow are statistically significant at $\alpha \leq 0.05$.

	06	26	29	32	42	Fairweather	Yarrow	Lewis
06								
26	1.000							
29	0.787	0.835						
32	0.000	0.000	0.108					
42	0.799	0.848	1.000	0.065				
Fairweather	0.000	0.000	0.171	1.000	1.000			
Yarrow	0.000	0.000	0.000	0.000	0.000	0.000		
Lewis	0.022	0.031	0.001	0.000	0.000	0.000	0.000	

Table D-2. Significance levels of Tukey multiple comparison tests comparing dissolved Zinc concentrations at five Mercer Island streams and three regional streams all with predominantly residential landuse. Values highlighted in yellow are statistically significant at $\alpha \leq 0.05$.

	06	26	29	32	42	Fairweather	Yarrow	Lewis
06								
26	0.000							
29	0.857	0.069						
32	0.001	0.000	0.000					
42	0.360	0.271	0.999	0.000				
Fairweather	0.853	0.000	0.189	0.059	0.019			
Yarrow	0.207	0.016	1.000	0.000	1.000	0.002		
Lewis	0.000	1.000	0.011	0.000	0.074	0.000	0.000	

Basin 10 had significantly different dCu and DZn concentrations compared to two regional streams with heavy commercial land use (Table D-3).

Table D-3. Significance levels of Tukey multiple comparison tests comparing dCu (left) and dZn (right) concentrations at basin 10 with two regional streams all with large commercial landuse. Values highlighted in yellow are statistically significant at $\alpha \leq 0.05$.

Copper

	10	Thornton	Yarrow
10			
Thornton	0.000		
Yarrow	0.000	0.171	

Zinc

	10	Thornton	Yarrow
10			
Thornton	0.000		
Yarrow	0.000	0.097	

Appendix E – Mercer Island Watercourse Typing

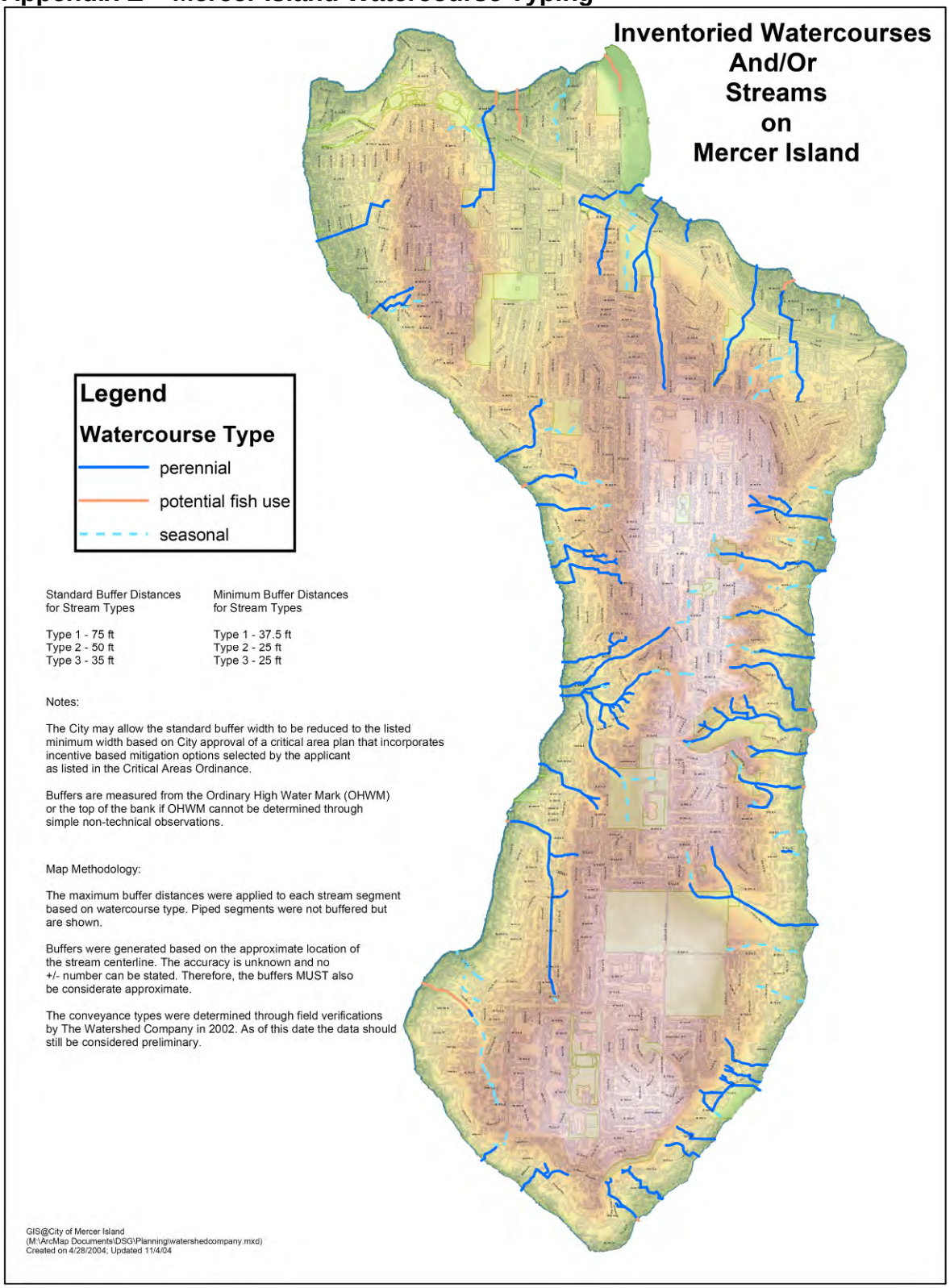

Figure E-1. Watercourse types of streams on Mercer Island. Prepared by the Watershed Company, 2002 (http://www.mercergov.org/files/watershedcompany_11x17.pdf).

Appendix E (Continued)

The Watershed Company field notes for basin visits to determine stream type and fish use (copied without editing from Watershed Company 2003). Emphasis added to highlight fish presence or absence. Fish use determinations were made only for streams that had open channels directly connected to Lake Washington. Therefore, some basins, such as basins 06 and 42, do not have fish presence/absence information.

Basin 06: Stream is piped from mouth to just above I-90. Above I-90, channel is in heavily wooded ravine. A tributary enters from west just above I-90. Main channel is perennial, flow observed off of W. Shorewood Drive in 4' wide section (9/24/02). Stream emerges from a pipe behind 3917 88th Ave. No flow in pipe, but flow observed in channel just below pipe from likely groundwater source. Perennial stream.

No flow was present in west tributary behind house #8404 (9/24/02), although local resident says that it flows year round during most years (note: this is a very dry summer). Jerry Meier also indicated (pers comm., 9/18/02 and 9/24/02) that this section is perennial.

Basin 10: Entire channel is perennial at all observation points (9/23/02 and 10/9/02). Downstream end, below SE 22nd St., flows through 4-foot-wide concrete flume to the lake. The 30" culvert under 22nd St. is a partial fish passage barrier due to (1) moderately high gradient and (2) high velocities with shallow depth over a flow length of 40-50 feet. The culvert outfalls directly onto flume where flows are even shallower and swifter. On 1/23/03, flow was estimated to be ±12 feet per second and 3 inches deep below outfall. 75 feet downstream of culvert, flow was 4 inches deep and ±8 feet per second. The lower section of flume below the driveway crossing is boxed in with wooden walkway, outfalling to the lake under the walkway/pier. Conclusion, treat as a collective barrier. **No fish access.**

Basin 26: The majority of this stream flows through open channels. The downstream end is open to the lake, but has a significant plunge that **prevents fish passage**. The stream is perennial up to Island Crest Way (9/18/02). Above Island Crest Way, the stream is piped up to the outflow from Ellis Pond. The outflow from Ellis Pond is through a wetland. No flow was observed above Island Crest Way (9/16/02) (seasonal stream).

Appendix E (Continued)

Basin 29: The mouth of this stream is open to the lake and is **known to contain fish** (Type 3) based on observation by USFWS (Tabor, pers. comm., 7/31/02) and The Watershed Company (8/5/02). Above the open downstream end, the stream is piped for approximately 300 feet before opening up in a well buffered corridor. This open channel extends up to W. Mercer Way and beyond for approximately 230 feet. From there, the stream is piped just past SE 70th St., where the channel opens once again. The entire stream is perennial up to SE 71st St. (9/18/02). A groundwater seep was observed just north of SE 71st St. and supplies continual flow to the channel. South of SE 71st St., the stream is seasonal (no flow observed coming from culvert under SE 71st St.). Due to overgrowth of Himalayan blackberry, the location of this seasonal channel was not verified.

Two small perennial tributaries enter the main channel, one above and one below W. Mercer Way. Both tributaries were previously identified as ditches (add to map). The lower tributary crosses W. Mercer Way just south of house #6110, originating as groundwater off of SE 61st St. (9/18/02). The second tributary originates as groundwater from a hillslope wetland just northeast of SE 65th St. and 81st Ave. SE (9/25/02).

Basin 32b: Fairly large stream with **very good fish access at mouth**. **Good conditions for coho use**, potentially up to W. Mercer Way (perennial Type 3) (10/3/02). Above W. Mercer Way, the open stream channel was observed to be dry (9/18/02). This seasonal channel extends up to SE 76th St, where it then alternates between open and piped sections up to SE 78th St. The break between perennial and seasonal flow is presumed to be the point where stormwater/drainage from a series of upstream man-made ponds ("The Lakes") flows in from a pipe along SE 72nd St.

Basin 42: The mainstem of this stream flows through very nice wooded ravines with large buffers (portions of Pioneer Park). Almost the entire stream, except for the last 400 feet, is open. One tributary enters from the north approximately 200 feet upstream of E. Mercer Way. A second tributary was previously identified to be flowing through Pioneer Park from Island Crest Way. This channel was not found after extensive reconnaissance (remove from map).

The mainstem was found to be flowing at E. Mercer Way (9/17/02) and through Pioneer Park. A groundwater seep was observed near the quarry spalls just east of the SE 63rd St. and 89th Ave. SE intersection. The stream is perennial downstream of the quarry spalls. Above the quarry spalls, the stream is piped for approximately 600 feet. A small open section of stream is present near the headwaters at house #8845 SE 61st St, but was not flowing at the time of observation (seasonal).

The one tributary which enters just upstream of E. Mercer Way was found to have significant flow at the SE 64th St. crossing (10/9/02). No flow was observed at the upstream limit along SE 61st St. near house #9033 (9/17/02). Perennial flow began approximately 250 feet downstream after collection of groundwater seeps.

Appendix D

2011-12 and Sampling Locations

Basin 10 and 32

Provided by:

King County Water and Land Resources Division

Mercer Island 2011 Sites

Basin 32:

1. MERCER32: Mouth off Holly Hill Drive (Thomas Guide p. 625)

2. MERCER32A: SE 72nd Street/76th Avenue SE- rectangular grate near curb on SW corner of intersection. Near house at 7203 76th Ave. SE. (T.G. p. 626)
47 32' 18.4"/ 122 14'14.7"

3. MERCER32B: SE 72nd Street/80th Place SE at "The Lakes" subdivision. Grating on SW corner next to curb. (T.G. p. 626)
47 32'18.2"/122 13'52.9"

4. MERCER32D: SE 69th Place/84th Ave. SE just south of QFC complex. Drain cover on sidewalk. Park in QFC back lot. (TG p. 626)
47 32' 26.2"/122 13' 37.2"

Basin 10: (Thomas Guide p. 596)

1. MERCER10: Mouth on SE 22nd Place
47 35'28.3"/122 14'10.0" (existing locator)

2. MERCER10A: Grate on NW corner of SE 27th Street/ 77th Avenue SE in front of B of A.
47 35'12.1"/122 14'06.4"

3. MERCER10B: Grate on NE corner of SE 27th Street/77th Avenue SE on 77th.
47 35' 12.5"/122 14' 06.0"

4. MERCER10C: Grate on NE corner of SE 27th Street/77th Avenue SE on 27th Street.
47 35' 12.0"/122 14' 05.7"

5. MERCER10D: 77th Avenue SE/SE 29th Street. Grating on SW corner- drainage from hill to west.
47 35' 03.7"/122 14' 06.6"

6. MERCER10E: 77th Avenue SE/SE 29th Street. Grated (?)manhole in street near SE corner. Main stem of creek.
47 35' 03.4"/122 14' 05.9"

7. MERCERh10F: SE 32nd Street east of 77th Avenue SE intersection- north of park. South side of SE 32nd- grating in street.
47 34' 54.4"/122 14' 05.4"

Legend
sampling_site_basin10
storm_gravitymain_Basin10
local_sewer_Basin10
MERCER10B
MERCER10A
MERCER10C

MERCER10D
MERCER10E
MERCER10F
Legend
sampling_site_basin10
storm_gravitymain_Basin10
local_sewer_Basin10

Legend
local_sewer_basin32
stormwater_gravitymain_basin32
MERCER32D
MERCER32A
MERCER32B