City of Salem
National Pollutant Discharge Elimination System (NPDES)
Municipal Separate Storm Sewer System (MS4)

Summary of Water Quality Data
For Reporting Year 2014/2015

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November 1, 2015

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1.0 Introduction

This document provides all monitoring data collected for the reporting year of July 1, 2014, to June 30, 2015 (RY 2014/15), in accordance with the City of Salem's NPDES MS4 permit requirements listed in Schedule B(5)(f)&(g). It also includes any additional data collected beyond the environmental data requirements in Table B-1, as required in Schedule F, Section C. A background narrative for each monitoring element for which data were collected for RY2014/15 is provided below, and all collected data are provided in the attached tables and figures[1].

2.0 Monitoring Elements

Specific details for each monitoring element can be found in the City's *Stormwater and Surface Water Monitoring Plan*. Progress toward meeting the monitoring requirements defined in Table B-1 of the City's MS4 Permit are summarized in Table 1. Monitoring site locations are described in Table 2 and denoted in Figure 1, and each parameter analyzed for each different monitoring element are described in Table 3.

2.1 Monthly Instream Monitoring

Sampling of designated urban streams for the Monthly Instream[2] monitoring element is conducted on a predetermined monthly schedule. This monitoring element includes the collection of grab samples and field measurements on 11 of Salem's MS4 stormwater runoff receiving streams and the Willamette River. Ten of these streams are paired with upstream (at or near where the stream enters the City's jurisdiction) and downstream (at or near where the stream exits the City's jurisdiction or enters a receiving stream) site locations. The eleventh stream, the West Fork Little Pudding River, only has a downstream site location, because the West Fork Little Pudding River starts in the greater Salem area and runs dry during the summer months. The Willamette River has three sites located upstream, mid-way, and downstream of city limits.

The general locations of all sites are provided in Table 2 and Figure 1.

A general suite of water quality parameters are collected for each site, with additional water quality parameters analyzed for the sites within the Pringle Creek Watershed (PRI1, PRI5, CLA1, and CLA10), West Fork Little Pudding River (LPW1), and the Willamette River (WR1, WR5, and WR10); these additional parameters are denoted with parentheses in the list below.

Water quality parameters collected include:

- Temperature
- Turbidity
- Specific Conductivity
- pH
- Dissolved Oxygen (DO)

[1] All tables, figures, and attachments are at the end of this document and are not discussed in the order in which they appear.

[2] Identified as "Urban Streams monitoring" in the City of Salem Stormwater Management Plan 2010.

- Nitrate + Nitrite as Nitrogen (NO_3+NO_2-N)
- *Escherichia coli (E. coli)*
- Biochemical Oxygen Demand (BOD_{stream})
- Zinc -total recoverable and dissolved (CLA1, CLA10, PRI1, PRI5 only)
- Copper -total recoverable and dissolved (CLA1, CLA10, PRI1, PRI5 only)
- Lead -total recoverable and dissolved (CLA1, CLA10, PRI1, PRI5 only)
- Hardness (CLA1, CLA10, PRI1, PRI5only)
- Total Suspended Solids (TSS) (LPW1, WR1, WR5, WR10 only)
- Alkalinity (WR1, WR5, WR10 only)
- Ammonia (WR1, WR5, WR10 only)
- Total Phosphorus (TP) (WR1, WR5, WR10 only)
- Total Solids (TS) (WR1, WR5, WR10 only)
- Total Dissolved Solids (TDS) (WR1, WR5, WR10 only)

Data for this monitoring element are provided in Tables 5 through 8, and Figures 2 and 3.

2.2 Continuous Instream Monitoring

The City maintains a network of Continuous Instream water quality monitoring sites and stream gauging sites on seven different urban streams within the city. There are currently 11 water quality and stream gauging sites and two stream gauge-only sites (PRI4 and LPW1) within city limits. The City added three stream gauge-only sites to the existing network last year as part of a flood warning system for the Mill Creek Watershed, all of which reside outside of Salem city limits. Figure 1 denotes the locations of each site that resides within city limits.

The monitoring sites for this monitoring element are positioned in an upstream/downstream configuration. The upstream sites are adjacent to where the stream enters the City and the downstream sites are either above the confluence with another stream or where the stream exits the City's jurisdictional boundary.

Continuous data collected includes:

- Turbidity
- Specific Conductivity
- Temperature
- pH
- DO
- Stage

All data are recorded in 15-minute intervals. All continuous statistical data summaries presented in the various tables and figures were computed using grade A and/or grade B data. Qualifications for what constitutes grade A and grade B data are provided in Table 9.

The Continuous Instream monitoring element incorporates an alarm system that supports the City's Illicit Discharge Detection and Elimination (IDDE) program. The alarm system is used to record, notify, and prompt investigation of water quality abnormalities that may be indicative of illicit discharges. It serves as an important tool to aid in the elimination of periodic illicit

discharges, helps to prioritize dry weather outfall screening activities (see section 2.6), and serves as an outreach/education opportunity for residents.

Monthly medians for collected data are summarized in Table 10. Plots of continuous data and a summary of system alarms are provided in Figures 4 through 7.

2.3 Instream Storm Monitoring

Instream Storm refers to the monitoring of MS4 receiving streams during defined storm events. Sampling occurs at three sites in the Pringle Creek Watershed (continuous instream monitoring sites PRI12, PRI3, and CLK1). Data collected are used to increase understanding of receiving waters within the Pringle Creek Watershed and help guide Salem's stormwater management strategies in watersheds throughout the city. This monitoring element was initiated this permit cycle and is expected to continue beyond the current MS4 permit; ultimately providing a dataset for long-term trending and spatial analyses.

Sampling consists of flow weighted composite samples, grab samples, and field measurements. Parameters include:

- *E. coli*
- Dissolved Oxygen
- pH
- Temperature
- Specific Conductivity
- Copper (Total Recoverable and Dissolved)
- Zinc (Total Recoverable and Dissolved)
- Lead (Total Recoverable and Dissolved)
- Hardness
- Ammonia Nitrogen (NH_3)
- NO_3+NO_2-N
- Ortho Phosphorus
- Total Phosphorus (TP)
- BOD_{stream}
- TSS

Data for this monitoring element are provided in Table 11.

2.4 Stormwater Monitoring

The City has collected water quality samples from a number of sites throughout the piped MS4 system since 1995. Three monitoring sites are identified in the current monitoring plan, one each for residential, commercial, and industrial land use. The commercial and industrial sites are new sites for this permit cycle, while the residential site was sampled during the previous MS4 Permit. Data from this monitoring element will be aggregated with previous data collected from similar land use types. The aggregated datasets will be used to characterize Salem's MS4 stormwater runoff pollutant concentrations by land use and compare them with the ACWA characterized land use concentrations.

Sampling consists of flow weighted[3] composite samples, grab samples, and field measurements.

Parameters include:

- *E. coli*
- Dissolved Oxygen
- pH
- Temperature
- Specific Conductivity
- Copper (Total Recoverable and Dissolved)
- Zinc (Total Recoverable and Dissolved)
- Lead (Total Recoverable and Dissolved)
- Hardness
- Ammonia Nitrogen (NH_3)
- NO_3+NO_2-N
- Ortho Phosphorus
- Total Phosphorus (TP)
- $BOD_{5\text{-day}}$
- TSS
-

Data for this monitoring element are provided in Table 12.

2.5 Pesticide Monitoring

Staff collected the fourth and final sample to fulfill the pesticide monitoring element requirement this reporting year. At the request of the DEQ, a summary of all pesticide results was submitted to the Oregon DEQ in August 2015.

Data for this monitoring element are provided in Table 13, and the analytical report from the laboratory is included at the end of this report as Attachment A.

2.6 Priority Dry Weather Outfall/Manhole Screening

For RY 2014/2015, dry weather inspections were completed at the 34[4] structures (outfalls and manholes), identified in the City of Salem's *Dry Weather Outfall and Illicit Discharge Screening Plan*. The plan also identifies action levels (i.e. level that triggers a source investigation by City staff of a suspected illicit discharge) for all observed and analytical data collected.

Observational data collected did not produce any direct indication of the presence of an illicit discharge at any of the 34 priority structures.

Field screening pollutant parameters include temperature, pH, specific conductivity, turbidity, and chlorine. Only chlorine had concentration levels above the action level (> 0 mg/L), which occurred at 9 of the 34 sites. Based on the presence of chlorine, seven of these locations were selected for further analytical testing for detergents, fluoride, potassium, sodium, ammonia, and

[3] Due to hydraulic conditions, accurate flow pace sampling is not achievable at the residential land use site (Electric), therefore the City has employed a time paced sampling protocol for this site.

[4] The plan had identified a total of 35 structures; however, staff were unable to locate one of the structures.

E. coli. The results of this additional screening did not show any conclusive evidence that an illicit discharge was present. The other two sites with detectable chlorine concentrations did not have additional analytical testing done, because it was determined during the RY 2013/2014 sampling efforts that a drinking water main leak was the source of the water/chlorine.

Data collected for this permit requirement are provided in Table 14.

3.0 Additional Sampling Efforts RY 2014/15

3.1 Additional E. coli sampling Efforts

3.1.1 Priority Dry Weather Screening – Follow Up *E. coli* Sampling

The *City of Salem's Dry Weather Outfall and Illicit Discharge Screening Plan* states additional sample analysis for bacteria, metals, or nutrients may be conducted at staff discretion. The presence of *E. coli* above the 406 MPN/100 mL acute water quality criterion in previous years within the Clark Creek watershed prompted further field sampling in RY 2014/15 in an attempt to identify the source(s) of bacteria. An additional area of focus for further *E. coli* sampling was an area in North Salem near the outfall to the Willamette River.

Data collected for this effort are provided in Table 15. See 3.1.2 below for information on additional sampling that was done as part of this effort.

3.1.2 Microbial Source Tracking Pilot Study

During RY14/15, the City contracted with an outside laboratory to perform quantitative Polymerase Chain Reaction (qPCR) analytical testing. This testing was completed as part of a Microbial Source Tracking (MST) pilot study to determine the viability of using qPCR analytical testing to help indentify sources of E. coli bacteria found during dry weather inspections.

The *City of Salem's Microbial Source Tracking Using qPCR Pilot Project Plan*, which details the purpose, background, objectives, study design, sample locations, collection method, analysis, and interpretation of results, can be found at the end of this document as Attachment B. Results from the laboratory can be found as Attachment C.

3.1.3 Pringle Creek Pilot Project – Goats for Weed Control in Riparian Area

In RY 2014/2015 the City approved Salem Revised Code (SRC400.120(d)(3))) allowing targeted short term grazing with goats within city limits for invasive weed control, including within the riparian zone. In order to assess potential impact to receiving streams, E. coli samples were collected above and below a stream reach on Pringle Creek where goats were used for weed control. Samples were collected before the goats arrived, during their stay, and immediately after the goats' departure. Of the 14 samples collected at 2 locations, none had E. Coli concentrations exceeding the 406 MPN/100 mL acute water quality criterion.

The requirements of this new code are included as Attachment D at the end of this document. Data collected are provided in Table 16.

3.2 Catch Basin Sediment Sampling (SWMP Requirement)

As stated in RC4 Task 11 of the City of Salem's Stormwater Management Plan (SWMP), the City must "periodically analyze the material removed from catch basins". During RY 2014/15, the City analyzed sediment from nine different catch basins around the City of Salem. Each of the nine sites were chosen based on land use type and street usage. The *City of Salem Catch Basin Sediment Sampling Plan Standard Operating Procedures (SOP)* which includes information on site selection, sampling design and collection, and QA/QC and data procedures is included at the end of this Appendix as Attachment E.

All data collected for this SWMP requirement are provided in Table 17, and the analytical report from the laboratory is included at the end of this report as Attachment F.

3.3 Saddle Club Subsurface Gravel Treatment Wetland

In addition to the required environmental monitoring data collected, the City also chose to continue to monitor the stormwater entering and leaving the Saddle Club subsurface gravel treatment wetland, as outlined in the Performance Monitoring Strategy. This monitoring has been conducted in conjunction with the Stormwater and Instream Storm monitoring, and follows the same criteria for storm event size, as well as analysis of the same parameters.

Data collected are provided in Table 18.

4.0 Conclusion

The City completed all MS4 Permit monitoring requirements for this reporting year, and, weather permitting, is on track to meet all of the minimum monitoring requirements outlined in the MS4 Permit before its expiration on December 29, 2015. Cumulatively, data collected throughout this MS4 Permit cycle will be used to meet monitoring objectives identified in the City's monitoring plan, while also supporting data analyses that will be included in the City's MS4 Permit renewal package.

Table 1.

Progress Towards Completion of Table B-1 Environmental Monitoring Elements

Monitoring Type	# of sites	Total "Events" Needed	Completed 2010/2011	Completed 2011/2012	Completed 2012/2013	Completed 2013/2014	Completed 2014/2015	Remaining "Events" Needed
Monthly Instream	21	48 / site	12[1]	12[1]	12[1]	12[1]	12[1]	NA
Continuous Instream	10	On going	NA	NA	NA	NA	NA	NA
Instream Storm	3	25 / site	0[2]	6	6	5	4	4
Stormwater (MS4)	3	15 / site	0[2]	4	4	4	1	2
Pesticides	3	4 / site	0[2]	1	2	0	1	COMPLETE
Mercury	2	2 / site / year	0[2]	2	1	1		COMPLETE[3]
Macroinvertebrates	3	2 / site	0[2]	1	1			COMPLETE

[1] Due to no flow or access issues, several of the sites had less than 12 data collection events; however, all sites are on track to meet the minimum permit requirements.

[2] The City's monitoring plan was not approved by the Department until June 29th, 2011; therefore, no sampling was conducted during this year for this element.

[3] Following Table B-1 Special Condition #6 of the City's NPDES MS4 permit, the City requested and received approval from Department to eliminate the mercury and methyl mercury monitoring requirement after completing the required two years of monitoring.

Table 2.

Site Locations for Each Monitoring Element

Monthly Instream	
Site ID	Site Location
BAT 1	Commercial St SE
BAT 12	Rees Hill Rd SE
CGT 1	Mainline Dr NE
CGT 5	Hawthorne St NE @ Hyacinth St NE
CLA 1	Bush Park
CLA 10	Ewald St SE
CRO 1	Courthouse Athletic Club
CRO 10	Ballantyne Rd S
GIB 1	Wallace Rd NW
GIB 15	Brush College Rd NW
GLE 1	River Bend Rd NW
GLE 10	Hidden Valley Dr NW
LPW 1	Cordon Rd NE
MIC 1	Front St Bridge
MIC 10	Turner Rd SE
MRA 1	High St SE
MRA 10	Mill Race Park
PRI 1	Riverfront Park
PRI 5	Bush Park
SHE 1	Church St SE
SHE 10	State Printing Office
WR1	Sunset Park (Keizer)
WR5	Union St. Railroad Bridge
WR10	Halls Ferry Road (Independence)

Continuous Instream	
Site ID	Site Location
BAT3	Commercial St SE
BAT12	Lone Oak Rd SE
CLK1[1]	Bush Park
CLK12	Ewald St SE
GLE3	Wallace Rd NW
GLE12	Hidden Valley Dr NW
LPW1[2]	Cordon Rd
MIC3	North Salem High School
MIC12	Turner Rd SE
PRI3[1]	Pringle Park
PRI4[2]	Salem Hospital Footbridge
PRI12[1]	Trelstad Ave SE
SHE3	Winter St. Bridge

Stormwater / Pesticides / Mercury	
Site Id	Site Location
Electric[3]	Electric St. SE and Summer St. SE
Hilfiker[3]	Hilfiker Ln. SE and Commercial St. SE
Salem Industrial	Salem Industrial Dr. NE and Hyacinth St. NE

[1] Instream Storm sampling done at these sites. [2] Stage-only gauging station. [3] Mercury monitoring conducted at these sites.

BAT = Battle Creek, CGT = Claggett Creek, CLA / CLK = Clark Creek, CRO = Croisan Creek, GIB = Gibson Creek, GLE = Glenn Creek, MIC = Mill Creek, MRA = Mill Race, PRI = Pringle Creek, SHE = Shelton Ditch, LPW = West Fork Little Pudding River, WR = Willamette River

Table 3.
Parameters for Each Monitoring Element

Parameter	Units	Monitoring Element			
		Instream Storm	Stormwater	Monthly Instream	Continuous Instream
Alkalinity	mg/L			x[1]	
Biological Oxygen Demand (BOD_{stream})	mg/L	x		x	
Biological Oxygen Demand (BOD_{5day})	mg/L		x		
Specific Conductivity (Sp. Cond)	µS/cm	x	x	x	x
Copper (Total Recoverable and Dissolved)	mg/L	x	x	x[2]	
Dissolved Oxygen (DO)	mg/L	x	x	x	x
E. coli	MPN/100 mL	x	x	x	
Hardness	mg/L	x	x	x[2]	
Lead (Total Recoverable and Dissolved)	mg/L	x	x	x[2]	
Ammonia Nitrogen (NH_3-N)	mg/L	x	x	x[1]	
Nitrate and Nitrite (NO_3.NO_2)	mg/L	x	x	x	
pH	S.U.	x	x	x	x
Total Dissolved Solids (TDS)	mg/L			x[1]	
Temperature	˚C	x	x	x	x
Total Phosphorus (TP)	mg/L	x	x	x[1]	
Ortho Phosphorus	mg/L	x	x		
Total Solids (TS)	mg/L			x[1]	
Total Suspended Solids (TSS)	mg/L	x	x	x[1],[3]	
Turbidity	NTU			x	x
Zinc (Total Recoverable and Dissolved)	mg/L	x	x	x[2]	

[1] Willamette River sites only (WR1, WR5, and WR10).

[2] Pringle Creek Watershed sites only (PRI1, PRI5, CLA1, and CLA10).

[3] West Fork of Little Pudding River site only (LPW 1).

Table 4.
Water Quality Criteria for Monitored Streams

Parameter	Season	Criteria	Applicable Waterbody
Dissolved Oxygen	January 1-May 15	Spawning: Not less than 11.0 mg/L or 95% saturation	Battle Creek*, Claggett Creek*, Clark Creek*[3], Croisan Creek*, Glenn Creek*, West Fork Little Pudding River*
	October 1- May 31	Spawning: Not less than 11.0 mg/L or 95% saturation	Gibson Creek*□ , Glenn Creek, Willamette River
	October 15 - May 15	Spawning: Not less than 11.0 mg/L or 95% saturation	Mill Creek*, Pringle Creek*[1], Shelton Ditch*
	Year Around (Non-spawning)	Cold water: Not less than 8.0 mg/L or 90% saturation	Battle Creek*, Croisan Creek*, Clark Creek, Glenn Creek*[4], Pringle Creek[2]
		Cool water: Not less than 6.5 mg/L	Claggett Creek*, Glenn Creek*, Mill Creek, Pringle Creek[1], Shelton Ditch, West Fork Little Pudding River
pH	Year Around	Must be within the range of 6.5 to 8.5 pH units	All Monitoring Streams
Temperature	October 15 - May 15	Salmon and steelhead spawning: 13˚C 7-day average maximum	Mill Creek, Shelton Ditch
	October 1- May 31	Salmon and steelhead spawning: 13˚C 7-day average maximum	Gibson Creek□
	Year Around (Non-spawning)	Salmon and trout rearing and migration: 18˚C 7-day average maximum	All Monitoring Streams
E. coli	Fall-Winter-Spring	30 day log mean of 126 E. coli organisms per 100 ml (or) no single sample > 406 organisms per 100 ml	All Monitoring Streams
	Summer	30 day log mean of 126 E. coli organisms per 100 ml (or) no single sample > 406 organisms per 100 ml	All Monitoring Streams
Biological Criteria	Year Around	Waters of the state must be of sufficient quality to support aquatic species without detrimental changes in the resident biological communities.	Claggett Creek*, Clark Creek*, Croisan Creek*, Glenn Creek*, Pringle Creek Trib*, Willamette River*
Copper	Year Around	Freshwater Acute and Chronic Criteria: 18 and 12 µg/L respectively with values calculated for a hardness of 100 mg/L	Pringle Creek*
Lead	Year Around	Freshwater Acute and Chronic Criteria: 82 and 3.2 µg/L respectively with values calculated for a hardness of 100 mg/L	Pringle Creek*
Zinc	Year Around	Freshwater Acute and Chronic Criteria: 120 and 110 µg/L respectively with values calculated for a hardness of 100 mg/L	Pringle Creek*

Note: All waterbodies in this table are included under the Willamette Basin or Molalla-Pudding Subbasin TMDL for Temperature and E. coli.

* Oregon's 2010 Integrated Report Section 303(d) listed.

□ Gibson Creek is referred as Gibson Gulch in Oregon's 2010 Integrated Report.

[1] Applies to Pringle Creek from river mile 0 to 2.6.

[2] Applies to Pringle Creek from river mile 2.6 to 6.2.

[3] Applies to Clark Creek from river mile 0 to 1.9.

[4] Applies to Glenn Creek from river mile 4.1 to 7.

Table 5.
Median Values for Monthly Instream Sites (RY 2014/15)

Station	Number of Samples	Temperature (C)	DO (mg/L)	Sp. Cond (µS/cm)	Turbidity (NTUs)	pH (S.U.)	E. Coli (MPN/100 mL)	NO_3-NO_2 (mg/L)	BOD_{stream} (mg/L)
BAT 1	12	11.9	10.0	50.0	10.4	6.6	128.0	0.77	0.98
BAT 12	12	11.4	10.3	45.8	8.1	6.9	298.5	0.68	0.88
CGT 1	12	14.6	9.7	181.2	10.1	7.3	162.0	0.37	1.57
CGT 5	12	14.8	9.9	153.9	22.7	7.4	460.5	0.54	1.87
CLA 1	12	12.7	10.0	91.8	3.9	7.1	495.0	0.92	0.98
CLA 10	12	12.6	9.4	71.4	4.2	6.6	160.5	1.40	0.86
CRO 1	12	11.6	10.3	70.0	8.2	7.0	82.0	0.47	1.08
CRO 10	12	11.5	9.6	51.7	9.5	6.7	41.5	0.40	0.88
GIB 1	12	12.7	9.7	83.4	11.2	6.9	115.5	1.00	1.06
GIB 15	12	13.2	9.9	95.9	11.1	7.1	121.0	1.74	0.86
GLE 1	12	12.9	9.8	93.1	10.9	7.1	172.0	1.13	0.86
GLE 10	10	10.8	10.6	61.6	9.3	7.0	51.0	1.47	0.75
LPW 1	9	11.6	9.7	204.8	7.3	7.0	249.0	1.29	1.14
MIC 1	12	13.9	10.0	78.1	4.3	7.0	131.0	1.09	0.98
MIC 10	12	12.8	10.8	68.2	5.4	7.3	147.5	1.03	1.06
MRA 1	12	13.7	10.1	74.8	5.1	7.1	202.5	1.08	1.13
MRA 10	12	13.4	9.5	75.6	5.2	6.9	161.0	1.05	1.07
PRI 1	11	13.9	10.2	64.4	5.6	7.1	110.0	0.55	1.09
PRI 5	12	14.3	10.0	87.7	6.3	7.1	98.0	0.99	1.60
SHE 1	12	13.3	10.2	73.3	5.2	7.2	94.5	1.08	1.07
SHE 10	12	13.3	10.3	72.4	5.3	6.9	108.0	1.09	1.07
WR1	12	14.6	11.1	69.9	4.5	7.7	25.0	0.25	0.88
WR5	12	14.3	10.0	69.5	4.6	7.2	25.0	0.23	0.88
WR10	12	14.7	10.5	67.7	4.5	7.3	8.5	0.20	0.97

Table 6.

Number of Water Quality Criteria Exceedances for Monthly Instream Sites (RY 2014/15)

Station	Number of Samples	Dissolved Oxygen	pH	E. Coli[5]			Copper[6]		Lead[6]		Zinc[6]	
				Total #	Dry[2]	Rain[3]	Total	Dissolved	Total	Dissolved	Total	Dissolved
BAT 1	12	8	4	4	1	3						
BAT 12	12	3	2	5	3	2						
CGT 1	12	6	0	5	2	3						
CGT 5	12	3	0	8	5	3						
CLA 1	12	4	0	8	5	3	2	2	0	0	1	1
CLA 10	12	0	4	5	2	3	1	0	0	0	1	1
CRO 1	12	7	1	3	0	3						
CRO 10	12	7	2	3	1	2						
GIB 1	12	5[1]	0	2	0	2						
GIB 15	12	5	0	4	2	2						
GLE 1	12	5	0	4	1	3						
GLE 10[4]	10	6	0	3	1	2						
LPW 1[4]	9	5	0	3	1	2						
MIC 1	12	2	0	2	0	2						
MIC 10	12	1	2	0	0	0						
MRA 1	12	NA	0	4	2	2						
MRA 10	12	NA	0	4	2	2						
PRI 1[4]	11	3	0	2	0	2	0	0	0	0	0	0
PRI 5	12	5	0	3	1	2	0	0	0	0	0	0
SHE 1	12	2	0	1	0	1						
SHE 10	12	3	0	2	1	1						
WR1	12	2	0	1	1	0						
WR5	12	4	2	1	1	0						
WR10	12	7	0	1	1	0						

Note: Copper, lead, and zinc collected at Pringle Creek Watershed sites only (PRI1, PRI5, CLA1, and CLA10).

NA = Not available (No dissolved oxygen water quality criteria associated with this waterbody).

[1] No year-round dissolved oxygen water quality criteria associated with this waterbody.

[2] Dry is < 0.05 inches of rainfall in previous 24 hours.

[3] Rain is ≥ 0.05 inches of rainfall in previous 24 hours.

[4] Unable to sample all 12 due to lack of flow/too high of flow.

[5] Single sample criterion of > 406 organisms per 100 mL used.

[6] Exceedences calculated based on hardness concentration for each event.

Table 7.
Monthly Instream Data (RY 2014/15)

Site Name:	BAT1								
Site Description:	Commercial St								
Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 11:25	18.2	7.31	64.1	15.3	6.73	>2420	0.65	4.39	0.06
8/19/2014 11:15	20	7.02	62	10.9	6.94	387	0.32	1.38	0
9/16/2014 11:00	15.9	6.82	64.2	59.5	6.69	980	0.26	1.42	0
10/14/2014 11:45	14.2	6.62	47.8	14.5	6.57	>2420	0.32	3.08	0.38
11/18/2014 10:20	5.7	11.18	51.1	6.75	6.42	66	0.94	0.68	0
12/16/2014 11:00	9.4	10.28	48.9	7.3	6.76*	44	1.57	0.83	0.075
1/20/2015 10:35	8.9	10.8	64	15.6	6	41	1.98	0.79	0
2/17/2015 11:45	9	11.05	46.4	8.41	6.39	20	1.63	0.92	0
3/17/2015 11:15	9.7	10.79	48.3	9.81	6.47	225	1.33	0.81	0
4/21/2015 11:35	12.2	10.25	46.2	5.26	6.68	128	0.88	0.7	0
5/12/2015 11:20	11.5	9.65	36.2	15.1	6.6	>2420	0.38	2.65	0.35
6/16/2015 11:12	15.9	8.26	54.6	9.41	6.83	345	0.35	1.03	0
Median	**11.85**	**9.95**	**50.0**	**10.355**	**6.60**	**128**	**0.77**	**0.98**	

Site Name:	BAT12								
Site Description:	Rees Hill Rd.								
Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 11:00	18.2	8.42	60.1	15.8	7.21	387	0.19	0.83	0.06
8/19/2014 11:00	18.7	7.21	71.1	13.8	7.27	517	0.25	1.09	0
9/16/2014 10:40	13.6	8.6	70.9	9.83	6.92	579	0.15	1.15	0
10/14/2014 11:08	13.1	8.62	66.5	9.46	6.97	>2420	0.16	3.5	0.38
11/18/2014 10:00	4.2	12.07	43.5	4.68	6.58	58	0.89	0.72	0
12/16/2014 10:50	9.1	10.61	45.7	4.78	6.7*	29	1.71	0.71	0.075
1/20/2015 10:20	8.4	11.08	45.9	10.5	6.02	NA	2.16	0.7	0
2/17/2015 11:30	8.9	11.07	43.6	4.49	6.45	24	1.69	0.91	0
3/17/2015 10:55	8.9	11.13	43.3	7.87	6.64	210	1.36	0.54	0
4/21/2015 11:15	11.4	10.45	42.2	4.04	6.7	46	0.96	0.84	0
5/12/2015 11:00	11.3	10.22	42.8	7.4	6.97	687	0.46	1.05	0.35
6/16/2015 10:51	16	9.25	50.9	8.29	7.05	921	0.11	0.97	0
Median	**11.35**	**10.34**	**45.80**	**8.08**	**6.92**	**298.5**	**0.68**	**0.88**	

Site Name:	CGT1								
Site Description:	Mainline Dr S								
Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 13:35	23.4	7.27	97.9	15.7	7.25	2420	0.06	4.68	0.06
8/19/2014 13:05	24.4	6.2	231	3.92	7.62	517	0.05	1.19	0
9/16/2014 12:45	19.1	5.15	176.6	5.36	7.36	80	0.07	1.4	0
10/14/2014 13:35	15.7	6.55	59.3	20.4	6.56	>2420	0.37	4.99	0.38
11/18/2014 12:10	5.1	12.26	176.3	8.42	6.82	155	0.49	1.14	0
12/16/2014 13:20	8.8	8.15	183.3	12.1	7.37*	118	1.16	1.11	0.075
1/20/2015 12:30	8.8	10.18	179.1	11.3	6.93	89	1.75	1.24	0
2/17/2015 13:31	10.9	10.17	204	8.1	7.23	31	0.95	1.05	0
3/17/2015 13:15	12.6	11.02	186.7	16.9	7.46	222	0.98	1.95	0
4/21/2015 13:25	17.2	10.04	208.2	8.88	7.63	162	0.17	1.73	0
5/12/2015 13:15	13.5	9.4	77.5	21.8	7.14	1986	0.32	4.01	0.35
6/16/2015 12:53	22.7	10.12	219.1	6.1	7.93	1414	<0.05	2.52	0
Median	**14.60**	**9.72**	**181.20**	**10.09**	**7.25**	**162**	**0.37**	**1.57**	

* pH field sensor malfunction, reading taken with laboratory equipment.

Note: Data in red exceed applicable water quality criteria (see Table 4). Single sample criterion (406 organisms/100 mL) used for E. Coli.

Table 7.
Monthly Instream Data (RY 2014/15)

Site Name: CGT5
Site Description: Hawthorne Ave

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 13:20	21.3	5.29	156.1	21.8	7	>2420	0.51	>7.39	0.06
8/19/2014 12:45	23.7	7.49	151.7	23.5	7.57	2420	0.12	2.86	0
9/16/2014 12:25	19.1	8.74	125.5	57.1	7.41	>2420	0.09	2.3	0
10/14/2014 13:25	15.4	7.6	73.4	27.3	6.64	>2420	0.56	4.22	0.38
11/18/2014 11:55	3.7	11.46	143.9	43.5	7	153	0.58	2.54	0
12/16/2014 12:55	9.7	10.07	177.7	9.64	7.51*	114	1.61	1.31	0.075
1/20/2015 12:15	9.2	10.8	183.8	20.3	6.96	308	2.53	1.08	0
2/17/2015 13:15	10.9	11.48	213.7	13.9	7.66	53	1.54	1.15	0
3/17/2015 12:55	12.4	11.14	184.2	18	7.67	613	1.57	1.09	0
4/21/2015 13:10	16	11.65	221	6.3	8.13	687	0.2	1.34	0
5/12/2015 13:00	14.2	8.64	61.8	54.3	6.98	>2420	0.25	5.63	0.35
6/16/2015 12:40	20.5	9.73	118.2	25.9	7.79	1046	0.06	1.87	0
Median	**14.80**	**9.90**	**153.90**	**22.65**	**7.41**	**460.5**	**0.54**	**1.87**	

Site Name: CLA1
Site Description: Bush Park

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs	Total Copper (mg/L)	Dissolved Copper (mg/L)	Total Lead (mg/L)	Dissolved Lead (mg/L)	Total Zinc (mg/L)	Dissolved Zinc (mg/L)	Hardness
7/22/2014 10:00	17.6	8.39	93.6	7.47	6.82	2420	0.83	5.66	0.06	0.005	0.0041	<0.0005	<0.0005	0.0155	0.0105	40
8/19/2014 10:25	18.8	8.73	90.8	4.12	7.24	122	0.54	0.71	0	<0.0025	<0.0025	<0.001	<0.001	0.0045	0.0052	31
9/16/2014 10:05	16	9.51	89.6	3.75	7.1	411	0.5	0.85	0	<0.0025	<0.0025	0.0005	<0.0005	0.0038	0.0045	27
10/14/2014 10:17	15.5	8.96	58.5	6.37	7.02	>2420	0.59	2.54	0.38	0.004	0.0034	<0.0005	<0.0005	0.014	0.0111	18
11/18/2014 10:36	8.5	11.35	95.1	2.08	7.21	613	1.21	0.94	0	<0.0025	<0.0025	<0.001	<0.001	0.0051	0.0049	NA
12/16/2014 10:46	11	10.55	92.7	2.91	7.07	365	1.52	1.02	0.075	<0.0025	<0.0025	<0.001	<0.001	0.0085	0.0074	32
1/20/2015 10:30	10.7	10.9	98.2	9.67	7.05	579	2.14	0.99	0	<0.0025	<0.0025	0.0009	<0.0005	0.0132	0.0103	31
2/17/2015 10:20	10	11.02	95.8	2.95	6.93	248	1.65	0.74	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0072	0.0058	33
3/17/2015 10:15	11.4	10.64	93.2	7.8	7.13	161	1.73	0.97	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0108	0.0076	30
4/21/2015 10:20	12.7	10.25	90.9	2.58	7.19	649	1	0.97	0	<0.0025	<0.0025	<0.0005	<0.0005	0.005	0.0098	30
5/12/2015 10:00	12.6	9.8	41.5	18.1	6.68	>2420	0.36	3.32	0.35	0.0053	0.0034	0.0014	<0.0005	0.0425	0.0301	18
6/16/2015 9:55	15.2	9.49	90.6	2.98	7.13	830	0.76	1.12	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0056	0.0057	35
Median	**12.65**	**10.03**	**91.80**	**3.94**	**7.09**	**495**	**0.92**	**0.98**		**NA**	**NA**	**NA**	**NA**	**0.0075**		**31**

Site Name: CLA10
Site Description: Ewald Ave

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs	Total Copper (mg/L)	Dissolved Copper (mg/L)	Total Lead (mg/L)	Dissolved Lead (mg/L)	Total Zinc (mg/L)	Dissolved Zinc (mg/L)	Hardness
7/22/2014 10:00	16.7	8.24	72.4	5.98	6.75	>2420	1.19	3.05	0.06	0.0031	<0.0025	<0.0005	<0.0005	0.0127	0.0082	24
8/19/2014 9:40	17.3	8.65	67.9	4.03	6.95	1553	1.05	1.04	0	<0.0025	<0.0025	<0.001	<0.001	0.0058	0.0043	21
9/16/2014 9:45	16.4	8.84	68.4	4.27	6.82	2420	0.95	1.03	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0046	0.0051	19
10/14/2014 10:05	15.7	8.26	68.7	5.66	6.53	>2420	0.97	1.2	0.38	<0.0025	<0.0025	<0.0005	<0.0005	0.0103	0.0079	20
11/18/2014 9:20	11.7	9.59	71.1	2.21	6.45	135	1.45	1.56	0	<0.0025	<0.0025	<0.001	<0.001	0.006	0.0076	NA
12/16/2014 9:35	11.9	9.8	75.3	2.85	6.52	66	2.03	0.53	0.075	<0.0025	<0.0025	<0.001	<0.001	0.0093	0.0086	21
1/20/2015 9:20	11.1	10.45	80.3	5.65	6.27	12	2.66	0.66	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0084	0.0082	22
2/17/2015 10:10	11.1	10.4	77.1	2.22	6	22	2.29	0.59	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0071	0.0063	22
3/17/2015 9:55	11.8	10.21	75.6	6.24	6.58	186	2.1	0.57	0	<0.0025	<0.0025	<0.0005	<0.0005	0.015	0.0146	22
4/21/2015 10:10	12.6	9.82	71.6	2.31	6.69	12	1.74	0.64	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0074	0.0074	22
5/12/2015 9:48	12.5	9.2	45.6	16.7	6.29	2420	0.79	3.88	0.35	0.0038	0.0026	0.0005	<0.0005	0.0328	0.0282	17
6/16/2015 9:50	14.8	9.3	67.2	3.02	6.93	228	1.35	0.69	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0049	0.0044	17
Median	**12.55**	**9.45**	**71.35**	**4.15**	**6.56**	**160.5**	**1.40**	**0.86**		**NA**	**NA**	**NA**	**NA**			**21**

* pH field sensor malfunction, reading taken with laboratory equipment.

NA=Medians not calculated for copper and lead due to the large number of censored values.

Note: Data in red exceed applicable water quality criteria (see Table 4). Single sample criterion (406 organisms/100 mL) used for E. Coli. Metals exceedances were calculated based on hardness results by site.

Table 7.
Monthly Instream Data (RY 2014/15)

Site Name: CRO1
Site Description: River Rd S

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 10:15	17.7	6.76	95.6	8.68	7.11	770	0.4	1.87	0.06
8/19/2014 10:10	19.4	4.84	103.1	6.44	7.08	184	0.26	1.27	0
9/16/2014 10:00	15.2	6.1	103	7.64	7.07	276	0.26	1.14	0
10/14/2014 10:20	13.8	7.96	80.6	28	6.93	>2420	0.4	3.25	0.38
11/18/2014 9:30	4.2	12.15	74.5	2.83	6.7	72	0.86	0.76	0
12/16/2014 9:50	8.8	11.03	64.3	5.48	7.06*	26	1.56	0.81	0.075
1/20/2015 9:40	8.6	11.42	62.4	13.6	6.27	42	1.95	0.89	0
2/17/2015 10:25	7.8	11.72	61.3	6.66	6.56	17	1.28	1.34	0
3/17/2015 10:13	8.9	11.42	61.8	15.9	6.91	82	1.14	0.78	0
4/21/2015 10:30	11.6	10.54	64.6	6.03	7.06	17	0.54	0.85	0
5/12/2015 10:10	11.5	10.06	65.4	12.3	6.98	1733	0.33	2.04	0.35
6/16/2015 10:00	15	7.5	87.2	12.5	6.98	249	0.29	1.02	0
Median	**11.55**	**10.30**	**69.95**	**8.16**	**6.98**	**82**	**0.47**	**1.08**	

Site Name: CRO10
Site Description: Ballantyne Rd.

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 10:45	17	6.99	73.6	9.94	7.02	435	0.35	0.87	0.06
8/19/2014 10:45	18.4	3.83	93.3	25.2	6.89	1046	0.33	1.25	0
9/16/2014 10:15	13.6	7.52	79.8	14.7	6.57	156	0.25	1.18	0
10/14/2014 10:45	13.3	7.12	84.2	13.7	6.76	613	0.31	3.02	0.38
11/18/2014 9:50	5	11.12	51	3.55	6.38	126	0.84	0.65	0
12/16/2014 10:10	8.7	10.46	51.5	4.68	6.74*	23	1.58	0.63	0.075
1/20/2015 10:00	8.3	11.2	50.9	11.4	6.1	9	1.97	1.15	0
2/17/2015 10:55	8.6	11.16	47.6	5.77	6.52	5	1.39	0.78	0
3/17/2015 10:35	9.1	10.93	47.1	13.2	6.7	24	1.09	0.65	0
4/21/2015 11:00	11.6	9.98	46	6.04	6.67	17	0.45	0.83	0
5/12/2015 10:45	11.3	9.29	51.9	6.7	7.88	25	0.3	1.08	0.35
6/16/2015 10:26	14.1	8.43	59.1	9.03	6.73	58	0.27	0.89	0
Median	**11.45**	**9.64**	**51.70**	**9.49**	**6.70**	**41.5**	**0.40**	**0.88**	

Site Name: GIB1
Site Description: Wallace Rd.

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 11:00	19.7	6.92	97.2	14.6	6.68	330	0.71	>7.81	0.06
8/19/2014 12:20	21.8	4.3	117.7	10.2	6.97	138	0.36	1.46	0
9/16/2014 10:45	16.3	5.62	108.4	11.2	6.92	126	0.27	0.68	0
10/14/2014 11:00	14.7	7.52	84.6	14.5	6.9	2420	0.34	2.86	0.38
11/18/2014 11:50	4.4	11.85	93.6	6.31	6.81	58	1.3	1.03	0
12/16/2014 11:42	8.8	10.82	80.3	7.45	6.92	60	2.09	0.99	0.075
1/20/2015 11:10	8.4	11.14	77.6	30	6.89	71	2.4	1.09	0
2/17/2015 11:08	9.1	11.12	76.7	17.2	6.91	75	2.16	0.85	0
3/17/2015 11:02	10.3	10.82	78.5	23.8	6.89	238	1.66	0.88	0
4/21/2015 11:15	12.8	9.91	82.1	6.99	7.1	71	1.25	1.06	0
5/12/2015 11:00	12.6	9.48	81.6	9.42	6.92	770	0.74	1.58	0.35
6/16/2015 10:50	16.9	7.69	100.3	11.2	7.24	105	0.56	1.15	0
Median	**12.70**	**9.70**	**83.35**	**11.20**	**6.92**	**115.5**	**1.00**	**1.06**	

* pH field sensor malfunction, reading taken with laboratory equipment.

Note: Data in red exceed applicable water quality criteria (see Table 4). Single sample criterion (406 organisms/100 mL) used for E. Coli.

Table 7.
Monthly Instream Data (RY 2014/15)

Site Name: GIB15
Site Description: Brush College Rd.

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 11:15	19.2	8.16	108.2	11.8	7.22	816	1.08	0.55	0.06
8/19/2014 12:35	21.4	7.21	115.2	38.3	7.31	>2420	0.72	1.52	0
9/16/2014 11:10	14.9	8.61	113.5	17.6	7.29	>2420	0.5	0.83	0
10/14/2014 11:20	14.5	8.64	115	7.72	7.36	1553	0.91	1.62	0.38
11/18/2014 12:06	4.5	11.85	97.7	4.81	6.79	111	1.86	1.24	0
12/16/2014 12:00	9.3	10.6	85.5	6.67	6.88	36	2.44	0.81	0.075
1/20/2015 11:25	9	11.07	81.8	16.7	6.98	42	2.62	0.8	0
2/17/2015 11:24	9.6	11	83.6	34	6.91	152	2.48	0.8	0
3/17/2015 11:18	10.4	10.73	81.8	17.5	6.83	93	1.76	0.84	0
4/21/2015 11:30	13.3	10.01	85.7	8.06	7.08	86	1.8	0.99	0
5/12/2015 11:10	13	9.74	94.1	10.4	7.04	131	1.72	1.35	0.35
6/16/2015 11:04	15.9	8.91	101	8.96	7.45	196	1.23	0.88	0
Median	**13.15**	**9.88**	**95.90**	**11.10**	**7.06**	**121**	**1.74**	**0.86**	

Site Name: GLE1
Site Description: River Bend Rd.

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 10:45	17.8	8.34	112.8	65.5	7.13	>2420	1.01	>7.86	0.06
8/19/2014 11:10	20	6.99	124.6	8.62	7.19	236	0.55	1.06	0
9/16/2014 10:30	15.2	7.7	129.4	13.2	7.02	517	0.58	1.03	0
10/14/2014 10:50	14.8	8.89	65.4	17.7	7	2420	0.42	2.59	0.38
11/18/2014 11:36	6.2	11.61	105.2	3.08	6.98	91	1.52	0.75	0
12/16/2014 11:26	9.8	10.7	93.2	5.49	7.1	146	2.23	0.86	0.075
1/20/2015 11:00	9.3	11.08	90.4	16	6.97	60	2.75	0.73	0
2/17/2015 10:55	9.4	11.05	83.8	8.01	6.99	133	2.17	0.56	0
3/17/2015 10:50	10.2	10.87	90.1	16.3	7.1	172	1.98	0.63	0
4/21/2015 11:05	13.4	9.81	92.9	5.91	7.22	93	1.24	0.61	0
5/12/2015 10:50	12.3	9.88	80.8	20.8	7	1046	0.69	2.02	0.35
6/16/2015 10:30	15.2	8.63	114.2	7.12	7.38	172	0.79	0.88	0
Median	**12.85**	**9.85**	**93.05**	**10.91**	**7.06**	**172**	**1.13**	**0.86**	

Site Name: GLE10
Site Description: Hidden Valley Dr.

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 11:30	17	8.83	81.8	10.4	7.26	>2420	0.47	<0.5	0.06
8/19/2014 13:00	No Flow								0
9/16/2014 11:30	No Flow								0
10/14/2014 11:30	13.9	8.92	80.8	7.21	6.91	548	0.08	1.61	0.38
11/18/2014 12:35	6.4	11.39	69.7	2.41	6.78	13	1.83	0.66	0
12/16/2014 12:21	9.4	10.74	65.9	7.28	6.81	51	2.58	0.7	0.075
1/20/2015 11:40	8.9	11.23	63	19.99	6.9	10	2.79	0.75	0
2/17/2015 12:05	10.1	10.87	57.8	11.3	6.94	3	2.17	0.56	0
3/17/2015 11:39	10.6	10.85	60.1	19	6.97	61	2.01	0.71	0
4/21/2015 11:45	12.5	10.19	58.7	8.18	7.14	55	1.11	0.84	0
5/12/2015 11:25	11	10.47	59.7	10.4	7.14	51	0.66	1.13	0.35
6/16/2015 11:20	13.8	9.84	59.5	7.73	7.26	435	0.42	0.97	0
Median	**10.80**	**10.61**	**61.55**	**9.29**	**6.96**	**51**	**1.47**	**0.75**	

Note: Data in red exceed applicable water quality criteria (see Table 4). Single sample criterion (406 organisms/100 mL) used for E. Coli.

Table 7.
Monthly Instream Data (RY 2014/15)

Site Name:	LPW1									
Site Description:	Cordon Rd.									
Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs	TSS
7/22/2014 13:00	20.4	1.07	113.4	12	6.54	579	0.12	5.15	0.06	14.4
8/19/2014 12:00	21.7	0.43	108.3	5.08	6.57	26	0.05	2.55	0	5.3
9/16/2014 12:05	No Flow									
10/14/2014 13:00	No Flow									
11/18/2014 11:20	3.1	9.69	170.4	6.72	6.61	236	1.29	1.14	0	3.4
12/16/2014 12:10	9.2	9.48	219.8	7.34	7.22*	276	3.33	0.66	0.075	7
1/20/2015 12:00	8.7	10.61	204.8	16.8	6.86	249	3.95	0.87	0	15.1
2/17/2015 12:55	9.7	11.47	240	16.9	7.17	179	2.66	1.46	0	20
3/17/2015 12:30	11.6	12.04	205.9	11.5	7.38	921	2.41	0.83	0	5.6
4/21/2015 12:50	15.3	10.79	252	3.65	7.15	167	0.64	1.07	0	2.7
5/12/2015 12:00	12.4	7.66	188	7.26	7.11	2420	0.32	1.99	0.35	7.6
6/16/2015 12:18	No Flow									
Median	**11.60**	**9.69**	**204.80**	**7.34**	**6.99**	**249**	**1.29**	**1.14**		**7.0**

Site Name:	MIC1								
Site Description:	Front St.								
Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 8:30	18.8	8.94	56.7	4.34	7.33	140	0.2	0.99	0.06
8/19/2014 8:55	21.3	8.53	55.1	4.31	7.24	167	0.17	0.75	0
9/16/2014 8:45	15.8	9.62	49.6	3.91	7.26	326	0.09	0.98	0
10/14/2014 9:00	14.7	9.57	61.3	4.06	6.95	>2420	0.23	1.53	0.38
11/18/2014 8:25	4.8	12.39	114.6	3.77	6.69	99	4.28	0.61	0
12/16/2014 8:40	8.4	11.39	103	5.48	6.97	72	3.93	0.74	0.075
1/20/2015 8:40	8.7	11.43	93.9	21.9	6.62	115	3.58	0.97	0
2/17/2015 9:10	8.4	11.7	92.4	5.82	6.6	70	2.73	1.05	0
3/17/2015 8:50	10.2	11	96.3	14.4	6.77	387	2.64	1.01	0
4/21/2015 9:00	14.5	9.97	90.1	3.71	7.03	60	1.68		0
5/12/2015 8:50	13.2	9.93	66	5.42	6.89	770	0.5	1.71	0.35
6/16/2015 9:05	17.7	9.21	62.9	3.58	7.32	131	0.22	0.84	0
Median	**13.85**	**9.95**	**78.05**	**4.33**	**6.96**	**131**	**1.09**	**0.98**	

Site Name:	MIC10								
Site Description:	Turner Rd								
Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 11:55	19.3	9.25	58.3	7.52	6.5	192	0.29	1.23	0.06
8/19/2014 11:30	20.9	9.07	49	4.7	7.56	184	0.16	1.16	0
9/16/2014 11:50	16.1	10.09	46.2	5.1	7.61	96	0.11	1.08	0
10/14/2014 12:45	13.6	9.97	53.1	4.07	7.31	291	0.18	1.19	0.38
11/18/2014 10:45	4.9	12.35	109.4	3.79	7	102	4.43	0.8	0
12/16/2014 11:20	8.5	11.1	98.8	5.63	7.23*	51	3.86	0.9	0.075
1/20/2015 11:00	7.9	11.1	90.3	17.4	6.47	59	3.75	0.88	0
2/17/2015 12:35	8.9	11.58	83.9	6.52	7.06	23	2.97	0.9	0
3/17/2015 11:35	9.8	11.22	89.1	12.4	7.15	185	2.79	0.92	0
4/21/2015 12:25	13.7	12.4	74.2	5.25	8.38	185	1.5	1.23	0
5/12/2015 11:39	11.9	10.55	62.1	7.01	7.38	326	0.56	1.46	0.35
6/16/2015 12:00	17.9	10.06	59.2	4.44	7.78	111	0.26	1.04	0
Median	**12.75**	**10.83**	**68.15**	**5.44**	**7.31**	**147.5**	**1.03**	**1.06**	

* pH field sensor malfunction, reading taken with laboratory equipment.

Note: Data in red exceed applicable water quality criteria (see Table 4). Single sample criterion (406 organisms/100 mL) used for E. Coli.

Table 7.
Monthly Instream Data (RY 2014/15)

Site Name: MRA1
Site Description: High St.

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 9:15	18.8	9.18	55.2	8.96	7.33	365	0.22	0.79	0.06
8/19/2014 9:50	21.2	8.58	51.6	3.74	7.25	488	0.15	0.82	0
9/16/2014 9:43	15.6	10.08	46.6	5.99	7.05	1046	0.08	1.1	0
10/14/2014 9:50	14.2	9.48	55.8	3.27	7.16	921	0.16	1.34	0.38
11/18/2014 10:10	4.5	12.78	114.9	4.56	7.18	113	4.5	0.92	0
12/16/2014 10:03	8.3	11.48	101.6	10.8	6.96	111	4.13	0.98	0.075
1/20/2015 10:00	7.9	9.96	100.1	24.3	6.93	96	3.1	1.35	0
2/17/2015 9:55	8.6	11.71	90.1	5.67	7.06	51	2.91	1.09	0
3/17/2015 9:29	10.4	10.93	94.9	12.2	7.12	129	2.69	1.16	0
4/21/2015 9:40	14.5	10.54	86	3.98	7.58	119	1.66	1.27	0
5/12/2015 9:40	13.1	10.15	63.5	4.37	7.09	579	0.5	1.46	0.35
6/16/2015 9:30	18	9.4	59.3	3.74	7.22	276	0.2	1.25	0
Median	**13.65**	**10.12**	**74.75**	**5.12**	**7.14**	**202.5**	**1.08**	**1.13**	

Site Name: MRA10
Site Description: 19th St.

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 8:40	18.7	8.23	58.2	6.39	7.05	276	0.26	0.84	0.06
8/19/2014 9:15	21.1	7.96	50.8	3.74	6.97	411	0.13	0.85	0
9/16/2014 9:08	15.2	9.54	46.7	4.93	6.85	488	0.1	1.18	0
10/14/2014 9:10	13.9	9.15	54.7	4.16	7.16	2420	0.18	1.36	0.38
11/18/2014 8:30	4.6	12.12	114.5	4.62	6.85	105	4.48	1.03	0
12/16/2014 9:15	8.2	11.05	101.3	6.61	6.75	84	3.84	1	0.075
1/20/2015 9:00	8.1	11.18	94.2	17.9	6.83	122	3.66	1.14	0
2/17/2015 9:00	8.3	11.3	89.9	6.54	6.83	62	2.93	0.81	0
3/17/2015 8:56	10.1	10.75	94	13.8	6.79	150	2.72	1.03	0
4/21/2015 9:05	14.1	9.38	85.8	4.97	6.97	127	1.58	1.16	0
5/12/2015 9:00	12.9	9.42	65.4	5.52	6.95	461	0.51	1.33	0.35
6/16/2015 9:00	17.8	8.5	59.6	4.11	6.76	172	0.17	1.1	0
Median	**13.40**	**9.48**	**75.60**	**5.25**	**6.85**	**161**	**1.05**	**1.07**	

Site Name: PRI1
Site Description: Waterfront Park

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs	Total Copper (mg/L)	Dissolved Copper (mg/L)	Total Lead (mg/L)	Dissolved Lead (mg/L)	Total Zinc (mg/L)	Dissolved Zinc (mg/L)	Hardness
7/22/2014 9:00	18.7	9.24	56.4	6.7	7.35	261	0.28	0.92	0.06	<0.0029	<0.0025	<0.0005	<0.0005	0.0049	<0.0025	35
8/19/2014 9:35	20.8	8.9	52.7	4.26	7.28	81	0.15	0.88	0	<0.0025	<0.0025	<0.001	<0.001	<0.0025	<0.0025	23
9/16/2014 9:30	15.6	10.1	49.3	4.97	7.14	110	0.09	1.29	0	0.0026	<0.0025	<0.0005	<0.0005	<0.0025	0.0055	19
10/14/2014 9:35	14.1	9.98	56.9	4.9	7.16	921	0.19	1.41	0.38	<0.0025	<0.0025	<0.0005	<0.0005	0.0036	<0.0025	21
11/18/2014 0:00	Unable to sample due to high flows															
12/16/2014 9:39	8.5	11.26	102.2	6.74	6.79	56	3.57	1.01	0.075	<0.0025	<0.0025	<0.001	<0.001	0.0029	<0.0025	29
1/20/2015 9:35	8.3	11.41	93.2	18.6	6.94	119	3.62	1.03	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0054	0.0047	32
2/17/2015 9:30	8.4	11.64	89.3	5.58	7	43	2.82	0.99	0	<0.0025	0.0026	<0.0005	<0.0005	<0.0025	<0.0025	32
3/17/2015 9:11	10.2	10.89	92.8	13.3	6.98	228	2.51	1.22	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0034	<0.0025	35
4/21/2015 9:20	13.9	10.33	84.5	4.53	7.23	73	1.6	1.09	0	<0.0025	<0.0025	<0.0005	<0.0005	<0.0025	0.0036	31
5/12/2015 9:20	13	10.2	64.4	7.92	7.04	1046	0.55	1.85	0.35	<0.0025	<0.0025	<0.0005	<0.0005	0.0098	0.0057	24
6/16/2015 9:15	17.7	9.56	63.2	3.89	7.22	99	0.21	1.19	0	<0.0025	<0.0025	0.0011	<0.0005	<0.0025	<0.0025	23
Median	**13.90**	**10.20**	**64.40**	**5.58**	**7.14**	**110**	**0.55**	**1.09**		**NA**	**NA**	**NA**	**NA**	**0.0049**	**0.0051**	**29**

NA= Medians not calculated for copper and lead due to the large number of censored values.

Note: Data in red exceed applicable water quality criteria (see Table 4). Single sample criterion (406 organisms/100 mL) used for E. Coli. Metals exceedances were calculated based on hardness results by site.

Table 7.
Monthly Instream Data (RY 2014/15)

Site Name: PRI5
Site Description: Bush Park

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs	Total Copper (mg/L)	Dissolved Copper (mg/L)	Total Lead (mg/L)	Dissolved Lead (mg/L)	Total Zinc (mg/L)	Dissolved Zinc (mg/L)	Hardness
7/22/2014 10:15	19.9	8.29	86.8	5.35	7.05	365	0.45	2.82	0.06	0.0031	<0.0025	<0.0005	<0.0005	0.0108	0.0054	45
8/19/2014 10:35	21.9	8.22	78.5	3.56	7.48	98	0.16	1.79	0	<0.0025	<0.0025	<0.001	<0.001	0.0037	0.006	33
9/16/2014 10:10	17.7	9.19	74	7.17	7.16	222	0.16	1.97	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0038	0.0082	26
10/14/2014 10:30	15.8	8.93	65.6	10.3	7.23	>2420	0.25	2.96	0.38	0.0028	<0.0025	<0.0005	<0.0005	0.011	0.0046	24
11/18/2014 10:44	6.5	11.6	95.2	4.08	7.05	29	1.27	1.46	0	<0.0025	<0.0025	<0.001	<0.001	0.0104	0.0047	NA
12/16/2014 11:00	9.7	10.73	94.1	4.51	7.13	41	1.9	1.21	0.075	<0.0025	<0.0025	<0.001	<0.001	0.0071	0.0058	35
1/20/2015 10:40	9.5	10.95	89.7	12.3	7.03	70	2.06	1.33	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0083	0.0064	32
2/17/2015 10:32	9.6	11.35	88.9	5.32	7.1	20	1.83	1.13	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0049	0.0035	31
3/17/2015 10:28	11.2	10.86	86	10.6	7.22	261	1.35	1.25	0	<0.0025	<0.0025	<0.0005	<0.0005	0.008	0.0051	33
4/21/2015 10:40	14.6	10.45	88.6	3.42	7.58	68	1.22	1.36	0	<0.0025	<0.0025	<0.0005	<0.0005	0.0036	0.004	33
5/12/2015 10:10	13.9	9.61	70.7	18.8	7.09	1414	0.75	2.48	0.35	0.0028	<0.0025	0.0008	<0.0005	0.0269	0.0126	27
6/16/2015 10:00	18	8.88	89.2	7.23	7.48	575	0.41	1.73	0	<0.0025	<0.0025	0.001	<0.0005	0.0208	0.0069	30
Median	**14.25**	**10.03**	**87.70**	**6.26**	**7.15**	**98**	**0.99**	**1.60**		**NA**	**NA**	**NA**	**NA**	**0.0082**	**0.0056**	**32**

Site Name: SHE1
Site Description: Church St.

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 9:30	18.6	9.01	53.3	5.63	7.29	147	0.26	0.53	0.06
8/19/2014 10:05	20.8	8.61	50.5	4.13	7.24	78	0.17	0.79	0
9/16/2014 9:50	15.4	9.87	47	3.89	7.07	93	0.09	1.11	0
10/14/2014 10:00	13.8	9.88	55	3.44	7.34	387	0.16	1.12	0.38
11/18/2014 10:20	4.7	12.6	113.3	3.66	7.24	96	4.53	1.27	0
12/16/2014 10:14	8.3	11.41	100.4	8.58	7.01	53	3.81	1.03	0.075
1/20/2015 10:10	8.1	11.49	92.8	18.7	6.97	96	3.76	0.96	0
2/17/2015 10:05	8.4	11.6	88.8	5.61	7	56	2.85	0.93	0
3/17/2015 10:00	10.1	11.08	92.3	14.7	7.12	345	2.74	1.15	0
4/21/2015 9:50	13.8	10.39	81.1	4.75	7.37	50	1.62	0.99	0
5/12/2015 9:50	12.8	10.07	65.4	10.1	7.12	411	0.54	1.34	0.35
6/16/2015 9:40	17.7	9.3	59.8	4.69	7.34	81	0.19	1.23	0
Median	**13.30**	**10.23**	**73.25**	**5.18**	**7.18**	**94.5**	**1.08**	**1.07**	

Site Name: SHE10
Site Description: Airport Road

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs
7/22/2014 8:25	18.8	9.14	53.3	6.22	7	124	0.3	0.75	0.06
8/19/2014 8:50	20.9	8.59	50	4.19	6.87	>2420	0.16	1.02	0
9/16/2014 9:00	15.4	9.9	45.9	5.17	6.91	142	0.09	1.1	0
10/14/2014 8:50	14.1	9.78	54.1	3.74	7.1	488	0.17	1.19	0.38
11/18/2014 8:50	4.7	12.61	112.8	4.4	7.1	69	4.41	0.75	0
12/16/2014 8:37	8.3	11.25	99.7	5.32	6.73	48	3.9	1.1	0.075
1/20/2015 8:40	8.4	11.28	91.9	18.8	6.67	62	3.69	0.98	0
2/17/2015 8:45	8.4	11.48	87.6	6.38	6.84	99	2.98	0.87	0
3/17/2015 8:42	9.9	10.98	91.6	13.6	6.65	249	2.78	1.04	0
4/21/2015 8:45	13.9	10.37	79.7	5.32	7.01	78	1.61	1.25	0
5/12/2015 8:45	12.7	10.3	65.1	6.85	7.07	214	0.56	1.22	0.35
6/16/2015 8:30	18	9.31	58.8	4.14	6.89	108	0.19	1.33	0
Median	**13.30**	**10.34**	**72.40**	**5.32**	**6.90**	**108**	**1.09**	**1.07**	

NA= Medians not calculated for copper and lead due to the large number of censored values.

Note: Data in red exceed applicable water quality criteria (see Table 4). Single sample criterion (406 organisms/100 mL) used for E. Coli. Metals exceedances were calculated based on hardness results by site.

Table 7.
Monthly Instream Data (RY 2014/15)

Site Name: WR1
Site Description: Sunset Park (Keizer)

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs	Alkalinity (mg/L)	Ammonia (mg/L)	TP (mg/L)	TDS (mg/L)	TS (mg/L)	TSS (mg/L)
7/22/2014 14:15	21.4	9.7	70	2.36	7.67	10	0.13	< 0.5	0.06	29	<0.05	0.037	58	63	4.8
8/19/2014 13:30	22.6	10.76	64.4	1.6	8.49	2	0.09	0.88	0	29	<0.05	0.031	56	59	2.8
9/16/2014 13:00	18	10.46	62.1	1.92	7.87	7	0.08	0.84	0	27	<0.05	0.029	58	62	4
10/14/2014 14:00	14.9	9.77	65.2	5.73	7.33	96	0.12	0.72	0.38	27	<0.05	0.05	66	72	6.4
11/18/2014 12:35	6.1	11.67	63.5	15.6	7.1	152	0.62	0.72	0	25	<0.05	0.073	67.6	78	10.4
12/16/2014 13:38	8	11.07	69.8	10.2	7.43*	34	0.74	0.84	0.075	26	<0.05	0.057	62	71	8.8
1/20/2015 13:10	8.3	11.11	64.8	34.7	6.79	131	0.9	0.97	0	24	<0.05	0.114	79	105	26.4
2/17/2015 14:10	9.6	11.04	78.8	9.73	7.14	14	0.79	0.68	0	29	<0.05	0.05	72	77	5.2
3/17/2015 13:40	11	10.64	80.6	19.1	7.36	722	0.77	1.06	0	29	0.082	0.082	82	95	13.2
4/21/2015 13:55	16.4	12.28	74.8	2.94	8.29	16	0.3	1.17	0	30	<0.05	0.036	59	62	2.8
5/12/2015 13:35	14.3	12.26	77.5	3.33	8.36	45	0.19	1.19	0.35	31	<0.05	0.026	71	76	5.2
6/16/2015 13:15	21.5	11.76	79.4	1.71	8.25	4	0.13	1.06	0	30	<0.05	0.039	58	61	3.2
Median	**14.60**	**11.06**	**69.90**	**4.53**	**7.67**	**25**	**0.25**	**0.88**		**29**	**0.082**	**0.0445**	**64**	**71.5**	**5.2**

Site Name: WR5
Site Description: Union Street Railroad Bridge

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs	Alkalinity (mg/L)	Ammonia (mg/L)	TP (mg/L)	TDS (mg/L)	TS (mg/L)	TSS (mg/L)
7/22/2014 9:10	19.6	8.86	70	2.61	7.42	7	0.15	<0.5	0.06	29	<0.05	0.037	65	71	6.4
8/19/2014 9:15	20.8	8.45	64.4	4.33	7.37	11	0.09	0.88	0	29	<0.05	0.039	65	69	3.6
9/16/2014 9:20	16.7	9.44	62.2	2.35	7.38	18	0.08	0.84	0	27	<0.05	0.03	55	60	5.2
10/14/2014 9:45	14.7	9.75	61.7	5.69	7.06	66	0.12	0.79	0.38	26	<0.05	0.049	61	68	7.2
11/18/2014 8:45	5.4	11.86	62.7	15.8	7.01	184	0.5	0.63	0	25	<0.05	0.081	63.4	75	11.6
12/16/2014 9:05	7.5	11.24	68.9	9.82	7.05	34	0.72	0.92	0.075	26	<0.05	0.057	66	74	8
1/20/2015 8:55	8	11.31	63.9	37.4	6.33	126	0.7	1.05	0	23	<0.05	0.117	78	104	26.4
2/17/2015 9:45	8.8	11.08	75.8	4.8	6.31	11	0.68	0.84	0	28	<0.05	0.048	72	78	6
3/17/2015 9:20	10.4	10.72	80.4	20.8	7.02	1203	0.64	1.62	0	28	0.087	0.086	77	93	15.6
4/21/2015 9:25	14.1	10.22	71.5	3.07	7.45	5	0.27	1.1	0	28	<0.05	0.036	63	68	5.2
5/12/2015 9:20	14.5	9.76	76.4	2.43	7.24	32	0.19	1.16	0.35	31	<0.05	0.029	70	77	6.8
6/16/2015 9:30	19.3	8.92	78	2.04	7.55	3	0.12	0.79	0	30	<0.05	0.041	59	64	4.8
Median	**14.30**	**9.99**	**69.45**	**4.57**	**7.15**	**25**	**0.23**	**0.88**		**28**	**0.087**	**0.0445**	**65**	**72.5**	**6.6**

Site Name: WR10
Site Description: Halls Ferry Road (Independence)

Collection Date/Time	Temp (°C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Rainfall previous 24 hrs	Alkalinity (mg/L)	Ammonia (mg/L)	TP (mg/L)	TDS (mg/L)	TS (mg/L)	TSS (mg/L)
7/22/2014 12:30	20.3	9.27	69	2.16	7.5	4	0.16	<0.5	0.06	29	<0.05	0.038	66	72	6.4
8/19/2014 13:20	24.2	9.13	65	1.89	7.79	3	0.09	1.67	0	29	<0.05	0.033	60	64	4
9/16/2014 12:35	17.7	10.1	61.9	2.85	7.58	3	0.08	0.9	0	27	<0.05	0.03	58	62	4.4
10/14/2014 12:30	14.9	9.55	62.3	5.61	7.38	14	0.13	0.93	0.38	27	<0.05	0.05	58	65	6.8
11/18/2014 12:56	6.2	11.82	60.5	15.6	6.96	158	0.48	0.62	0	25	<0.05	0.07	67.2	78	10.8
12/16/2014 13:20	8.2	10.9	66.3	10.2	7.13	25	0.6	0.94	0.075	27	<0.05	0.056	63	70	7.2
1/20/2015 12:45	8.6	10.92	62.6	34.2	7.14	111	0.66	1.12	0	23	<0.05	0.111	76	103	27.2
2/17/2015 12:26	9.2	10.82	75.8	9.6	7.03	5	0.7	<0.5	0	28	<0.05	0.052	71	79	8
3/17/2015 12:15	10.8	10.48	77.2	20.3	7.15	1553	0.62	1.3	0	28	0.085	0.085	72	85	13.2
4/21/2015 12:40	15.2	10.5	71.3	3.26	7.44	10	0.22	1	0	27	<0.05	0.041	65	67	2.4
5/12/2015 11:42	14.5	10.48	76	3.38	7.48	7	0.18	1.2	0.35	30	<0.05	0.034	70	75	4.8
6/16/2015 12:30	21.7	9.52	76.3	2.34	6.89	5	0.12	0.88	0	29	<0.05	0.038	60	64	4
Median	**14.70**	**10.48**	**67.65**	**4.50**	**7.27**	**8.5**	**0.20**	**0.97**		**27.5**	**0.085**	**0.0455**	**65.5**	**71**	**6.6**

* pH field sensor malfunction, reading taken with laboratory equipment.

Note: Data in red exceed applicable water quality criteria (see Table 4). Single sample criterion (406 organisms/100 mL) used for E. Coli.

Table 8.

Monthly Instream Data - Duplicates (RY 2014/15)

Site ID	Collection Date/Time	Temp (C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	TSS	Total Copper (mg/L)	Dissolved Copper (mg/L)	Total Lead (mg/L)	Dissolved Lead (mg/L)	Total Zinc (mg/L)	Dissolved Zinc (mg/L)	Hardness
CLA1	7/22/2014 10:05	17.6	8.32	93.7	7.35	6.91	1986	0.8	5.52		0.0051	0.0041	<0.0005	<0.0005	0.016	0.0105	40
PRI5	07/22/2014 10:20	19.9	8.26	86.8	5.09	7.07	411	0.49	2.26		0.0027	<0.0025	<0.0005	<0.0005	0.0104	0.0051	43
CLA10	08/19/2014 09:45	17.2	8.68	68.1	4.52	6.91	2420	0.98	0.74		<0.0025	<0.0025	<0.001	<0.001	0.006	0.0043	21
CRO1	08/19/2014 10:20	19.3	4.85	103.2	7.07	7.09	411	0.26	1.21								
GLE1	08/19/2014 11:15	19.6	6.97	126.5	8.62	7.22	152	0.54	0.89								
CRO10	09/16/2014 10:16	13.5	7.61	80.5	13.1	6.82	162	0.28	2.56								
GIB1	09/16/2014 10:55	16.4	5.11	112.8	12.2	6.86	102	0.31	1.17								
GIB15	09/16/2014 11:14	14.7	8.55	113.9	17	7.3	>2420	0.52	1.19								
BAT12	10/14/2014 11:13	13.1	8.63	66.5	9.4	7.01	>2420	0.13	3.65								
GLE10	10/14/2014 11:35	13.9	8.91	80.9	7	6.92	613	0.09	1.21								
BAT1	10/14/2014 11:49	14.2	6.64	47.8	15	6.5	>2420	0.32	3.01								
SHE10	11/18/2014 08:58	4.7	12.61	112.9	4.22	7.04	83	4.6	0.56								
MIC10	11/18/2014 10:50	4.9	12.34	109.3	4	6.96	98	4.62	0.71								
SHE10	12/16/2014 08:38	NA	NA	NA	NA	NA	58	3.98	0.7								
LPW1	12/16/2014 12:14	9.3	9.55	220	7.45	7.25	225	3.37	1.12	6.8							
CGT5	12/16/2014 12:57	9.7	10.07	177.7	9.6	7.56	145	1.6	0.99								
MRA10	01/20/2015 09:01	8.2	11.17	94.1	17.5	6.77	64	3.47	0.86								
PRI1	01/20/2015 09:40	8.4	11.37	93.3	18.2	6.9	109	3.39	1.04		<0.0025	<0.0025	<0.0005	<0.0005	0.0044	0.0035	32
CGT1	01/20/2015 12:40	8.9	10.11	178.6	11.1	6.92	102	1.48	0.91								
MRA10	02/17/2015 09:04	8.3	11.32	90	6.26	6.86	75	2.89	1.03								
PRI1	02/17/2015 09:35	8.4	11.64	89.3	5.45	6.92	72	2.68	1.1		<0.0025	<0.0025	<0.0005	<0.0005	<0.0025	<0.0025	34
CGT1	02/17/2015 13:34	10.9	10.27	204.7	8.64	7.26	28	0.82	1.07								
MIC1	03/17/2015 08:55	10.2	11.03	96.4	15.5	6.8	205	2.6	0.76								
MRA1	03/17/2015 09:34	10.3	10.92	95	11.9	7.07	228	2.62	1.01								
SHE1	04/21/2015 10:00	13.8	10.42	80.9	4.69	7.37	49	1.57	1.16								
CLA1	04/21/2015 10:25	12.6	10.27	90.8	2.53	7.18	1046	1.06	0.95		<0.0025	<0.0025	<0.0005	<0.0005	0.0065	0.0048	32
CLA10	05/12/2015 09:55	12.6	9.14	46	16	6.32	2420	0.83	3.16		0.0037	0.0027	0.0005	<0.0005	0.0318	0.0292	17
PRI5	05/12/2015 10:15	13.9	9.58	70.6	20.7	7.08	1120	0.75	2.5		0.0027	<0.0025	<0.0005	0.0008	0.0271	0.0107	27
CRO1	05/12/2015 10:15	11.5	10.06	66.4	12.5	7	2420	0.33	1.69								
CRO10	06/16/2015 10:28	14	8.44	59.7	8.19	6.55	48	0.26	1.22								
GLE1	06/16/2015 10:35	15.1	8.65	114.2	7.69	7.41	238	0.8	0.79								
BAT12	06/16/2015 10:53	16	9.22	50.7	8.2	7.08	1203	0.14	1.05								

Willamette River Sites Duplicates (RY 2014/15)

Site ID	Collection Date/Time	Temp (C)	DO (mg/L)	Sp Cond (µS/cm)	Turb (NTUs)	pH (S.U.)	E-Coli (MPN/ 100 mL)	NO_3-NO_2 (mg/L)	BOD (mg/L)	Alkalinity (mg/L)	Ammonia (mg/L)	TP (mg/L)	TDS (mg/L)	TS (mg/L)	TSS (mg/L)
WR5	07/22/2014 09:10	19.6	8.86	70	2.61	7.42	11	0.15	<0.5	31	<0.05	0.034	62	65	3.3
WR10	11/18/2014 13:15	6.3	11.81	60.4	16.4	6.97	201	0.42	0.56	26	<0.05	0.071	60.8	72	11.2
WR1	03/17/2015 13:50	11	10.63	80.6	21.6	7.41	1733	0.82	1.03	29	0.082	0.08	79	92	12.8
WR5	04/21/2015 09:29	14.3	10.22	72.2	3.79	7.44	12	0.24	1.01	29	<0.05	0.037	59	62	3.2

Note: Duplicate field measurements and duplicate grab samples are taken at 10 percent of the sites each month. These sites are selected prior to sampling.

Table 9.
Continuous Instream Grade A and Grade B Data Qualifications

Grade Values	Temperature (˚C)	pH	Specific Conductivity (µS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)
A	± < 0.5	± ≤ 0.30	≤ 10%	± ≤ 3 or 5% (whichever is greater)	± ≤ 0.3
B	± 0.51 to 2.00	± > 0.3 to 0.50	> 10% to ≤ 15%	± ≤ 5 or 30% (whichever is greater)	± > 0.3 to ± ≤ 1.0

Note: As stated in the "Continuous Water Quality Monitoring Program Quality Assurance Project Plan", data grades are a result of the absolute difference (value or percent) of station instrument reading and audit instrument reading at the time of site audit.

Table 10.
Monthly Median Values for Continuous Instream Data (RY 2014/15)

Monthly Medians for **Turbidity** at Continuous Instream Sites

	Jul 2014	Aug 2014	Sep 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015
Station Name	Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)
BAT3	10.12	9.37	15.96	12.97	11.11	9.55	7.06	7.35	8.01	5.47	6.20	10.04
BAT12	8.30	5.90	5.30	NA	NA	7.00	3.76	4.01	4.01	3.47	4.69	5.51
CLK1	3.80	3.30	3.80	NA	2.30	4.00	6.20	3.70	2.80	2.10	2.00	1.70
CLK12	6.96	5.92	8.03	NA	NA	NA	3.80	1.70	2.20	1.35	1.50	1.80
GLE3	9.20	9.00	7.90	16.00	4.00	7.70	5.30	8.40	6.50	5.30	5.40	6.70
GLE12	14.55	54.40	1.70	1.80	NA	5.60	6.10	9.70	8.30	5.70	5.40	5.40
MIC3	8.59	6.82	6.49	3.58	8.10	9.04	4.94	6.36	5.33	4.33	3.83	4.30
MIC12	11.03	NA	5.41	4.66	7.52	9.03	5.46	7.48	6.73	6.03	4.95	4.79
PRI3	NA	7.52	9.01	NA	14.53	12.21	9.39	NA	NA	6.48	5.64	6.15
PRI12	10.26	9.74	11.06	15.10	10.92	11.09	11.87	21.19	10.94	9.30	13.70	15.45
SHE3	8.94	8.86	10.80	9.47	NA	NA	NA	No Sonde	No Sonde	No Sonde	No Sonde	No Sonde

Monthly Medians for **Specific Conductivity** at Continuous Instream Sites

	Jul 2014	Aug 2014	Sep 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015
Station Name	Specific Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Specific Conductivity (µS/cm)	Specific Conductivity (µS/cm)
BAT3	57.2	61.5	63.2	61.0	58.2	48.3	49.7	45.3	47.5	47.9	50.6	54.6
BAT12	52	65	68	NA	NA	NA	NA	NA	NA	51.49	No Sensor	51.26
CLK1	91	91	90	91	93	NA	92	95	93.0	92.0	92.0	92.0
CLK12	67.4	67.6	68.7	69.3	72.3	75.6	73.9	NA	77.0	73.0	68.0	69.0
GLE3	121.0	125.0	141.0	113.5	108.0	94.0	87.0	91.0	93.0	95.0	102.0	114.0
GLE12	82.0	120.0	107.0	89.0	72.0	68.0	63.0	63.0	62.0	61.0	63.0	71.0
MIC3	62.6	55.5	51.0	61.4	117.6	104.7	99.2	91.1	92.2	88.3	69.8	60.0
MIC12	51.6	NA	48.64	67.705	115.71	102.59	95.74	94.77	97.82	77.63	65.04	51.9
PRI3	97.4	90.1	84.7	82.4	97.6	93.9	95.7	92.1	93.7	93.2	96.9	97
PRI12	67	54.2	51.8	100.2	118.5	94.6	92.2	83.9	87	86.35	84	66.6
SHE3	52.4	49.6	45.8	54.5	112.15	97.5	NA	No Sonde	No Sonde	No Sonde	No Sonde	No Sonde

Presented median values consist of A and B grade data only. NA = 60% of the continuous record for a given month is not represented by A and B grade data.
No sonde = The WQ monitoring station did not have a sonde deployed during this time due to equipment malfunction.

Table 10.
Monthly Median Values for Continuous Instream Data (RY 2014/15)

Monthly Medians for **Temperature** at Continuous Instream Sites

	Jul 2014	Aug 2014	Sep 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015
Station Name	Temperature (˚C)	Temperature (˚C)	Temperature (˚C)	Temperature (˚C)	Temperature (˚C)	Temperature (˚C)	Temperature (˚C)	Temperature (˚C)	Temperature (˚C)	Temperature (˚C)	Temperature (˚C)	Temperature (˚C)
BAT3	18.89	19.75	16.96	14.23	10.87	9.98	8.76	9.72	10.39	10.92	13.41	NA
BAT12	18.09	18.08	14.80	12.59	9.74	9.57	8.24	9.20	9.11	No Sensor	No Sensor	17.99
CLK1	18.13	18.83	17.30	15.43	12.09	11.43	10.25	11.03	11.70	12.00	14.15	16.86
CLK12	16.26	17.23	16.65	15.58	13.38	12.56	11.35	11.46	11.88	12.08	13.49	15.57
GLE3	18.12	18.57	16.38	14.53	11.09	10.13	8.95	10.15	10.99	11.45	13.96	16.74
GLE12	16.72	NA	15.53	13.25	10.11	9.54	8.26	9.39	9.95	10.00	12.18	15.16
MIC3	21.07	21.24	16.07	14.06	10.09	8.98	8.15	9.60	11.31	11.91	15.58	20.09
MIC12	20.35	20.62	15.36	13.63	10.13	8.98	8.15	9.52	10.88	11.67	15.04	19.34
PRI3	20.09	21.24	18.42	15.48	10.92	10.07	8.84	10.53	11.92	12.52	15.70	19.63
PRI12	19.96	20.28	16.48	14.39	10.82	8.49	7.83	9.91	10.77	11.34	14.83	19.14
SHE3	20.79	20.84	16.71	14.02	10.22	9.15	NA	No Sonde	No Sonde	No Sonde	No Sonde	No Sonde

Monthly Medians for **pH** at Continuous Instream Sites

	Jul 2014	Aug 2014	Sep 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015
Station Name	pH (S.U)	pH (S.U)	pH (S.U)	pH (S.U)	pH (S.U)	pH (S.U)	pH (S.U)	pH (S.U)	pH (S.U)	pH (S.U)	pH (S.U)	pH (S.U)
BAT3	6.94	6.85	6.76	6.57	6.44	6.34	6.47	6.47	6.55	6.59	6.82	6.97
BAT12	7.35	7.19	7.09	7.23	7.02	6.70	6.92	7.02	7.11	7.20	7.48	7.64
CLK1	6.90	6.92	6.96	6.86	7.04	6.92	7.02	6.98	7.00	6.99	6.81	6.91
CLK12	6.63	7.00	7.04	6.47	6.21	6.43	6.64	6.59	6.52	6.52	6.73	6.75
GLE3	7.48	7.57	7.52	7.34	7.17	6.99	7.10	6.93	7.03	7.16	7.32	7.46
GLE12	7.08	6.92	7.07	6.98	6.89	6.91	6.98	7.00	7.10	7.22	7.30	7.39
MIC3	7.70	7.48	7.54	7.59	7.57	7.43	7.57	7.32	7.49	7.69	No Sensor	No Sensor
MIC12	7.53	7.56	7.38	7.40	7.26	7.14	7.27	7.32	7.44	7.18	7.26	7.34
PRI3	7.68	7.61	7.75	7.46	7.25	7.29	7.54	NA	7.26	7.14	7.31	7.46
PRI12	6.93	7.23	7.08	NA	NA	6.65	6.99	NA	NA	6.73	7.28	NA
SHE3	7.37	8.13	7.96	7.66	7.53	7.64	NA	No Sonde	No Sonde	No Sonde	No Sonde	No Sonde

Presented median values consist of A and B grade data only. NA = 60% of the continuous record for a given month is not represented by A and B grade data.
No sonde = The WQ monitoring station did not have a sonde deployed during this time due to equipment malfunction.

Table 10.
Monthly Median Values for Continuous Instream Data (RY 2014/15)

Monthly Medians for **Dissolved Oxygen** at Continuous Instream Sites

	Jul 2014	Aug 2014	Sep 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015
Station Name	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)	Dissolved Oxygen (mg/L)
BAT3	7.36	6.82	7.00	7.83	9.59	10.59	11.40	10.73	10.31	10.02	9.01	7.91
BAT12	9.02	7.70	7.70	9.82	11.49	11.73	11.90	11.41	11.20	11.11	9.01	8.76
CLK1	8.74	8.72	9.06	9.43	10.67	10.93	11.36	10.80	10.57	10.40	9.57	9.00
CLK12	8.66	8.62	8.88	8.51	9.25	9.68	10.38	10.23	10.13	9.93	9.58	9.06
GLE3	8.68	8.49	8.89	9.42	10.47	10.90	11.31	10.53	10.69	10.46	9.68	8.92
GLE12	7.86	5.51	7.80	9.26	10.27	10.53	11.45	11.20	11.12	11.11	10.52	9.71
MIC3	8.63	8.39	9.44	10.08	11.51	12.04	12.47	11.32	11.04	10.87	9.62	8.67
MIC12	7.69	NA	9.50	9.78	10.61	10.98	11.56	10.80	10.60	10.55	9.67	8.90
PRI3	7.98	7.99	8.48	9.03	10.12	10.41	11.07	10.69	10.29	9.70	8.90	7.91
PRI12	7.60	7.74	8.45	7.46	8.30	9.52	10.29	10.37	10.23	9.65	8.81	7.92
SHE3	8.48	8.61	9.31	9.71	10.74	11.14	NA	No Sonde	No Sonde	No Sonde	No Sonde	No Sonde

Monthly Medians for **Stage** at Continuous Instream Sites

	Jul 2014	Aug 2014	Sep 2014	Oct 2014	Nov 2014	Dec 2014	Jan 2015	Feb 2015	Mar 2015	Apr 2015	May 2015	Jun 2015
Station Name	Stage (ft)	Stage (ft)	Stage (ft)	Stage (ft)	Stage (ft)	Stage (ft)	Stage (ft)	Stage (ft)	Stage (ft)	Stage (ft)	Stage (ft)	Stage (ft)
BAT3	4.02	3.96	3.96	4.08	4.43	5.02	4.60	4.66	4.58	4.53	4.25	4.09
BAT12	4.73	4.62	4.58	4.71	5.04	5.33	5.13	5.14	5.11	5.02	4.87	4.77
CLK1	3.93	3.85	3.88	4.15	4.41	4.50	4.32	4.31	4.33	4.24	4.03	3.90
CLK12	3.97	3.94	3.93	4.01	4.16	4.26	4.07	4.10	4.11	4.09	3.96	3.93
GLE3	4.12	4.09	4.06	4.31	4.56	4.83	4.54	4.60	4.49	4.39	4.23	4.15
GLE12	0.71	NA	0.66	0.73	0.90	1.09	0.99	1.01	0.97	0.91	0.82	0.75
LPW1	No flow	No flow	No flow	No flow	1.70	2.04	1.68	1.72	1.70	1.80	1.54	No flow
MIC3	5.26	5.20	5.34	5.19	5.80	6.51	5.80	5.93	5.72	5.57	5.37	5.43
MIC12	7.20	7.10	7.10	6.90	7.49	8.15	7.66	7.70	7.54	7.43	7.18	7.05
PRI3	4.24	4.26	4.28	4.34	4.53	4.67	4.49	4.49	4.49	4.44	4.30	4.26
PRI4	7.44	7.49	7.50	7.58	7.89	8.17	7.84	7.92	7.89	7.83	7.61	7.56
PRI12	4.26	4.33	4.31	4.22	4.31	4.61	4.37	4.41	4.41	4.41	4.27	4.37
SHE3	5.68	5.60	5.57	5.40	5.95	6.65	6.12	6.15	6.02	5.98	No Sensor	No Sensor

Presented median values consist of A and B grade data only. NA = 60% of the continuous record for a given month is not represented by A and B grade data.
No sonde = The WQ monitoring station did not have a sonde deployed during this time due to equipment malfunction.

Table 11.
Instream Storm Monitoring Data (RY 2014/15)

Site Name:	CLK1																		
Site Description:	Lower Clark Creek just upstream of confluence with Pringle Creek																		
Sample Collection Date/Time	**E. Coli**	**Diss. Oxygen**	**pH**	**temp**	**Sp. Cond, field**	**Sp. Cond, comp**	**Cu**	**Cu diss**	**Zn**	**Zn diss**	**Pb**	**Pb diss**	**Hardness**	**NH3**	**NO_3-NO_2**	**Ortho P**	**TP**	**BODs**	**TSS**
mm/dd/yyyy HH:MM	MPN/100 mL	mg/L	S.U	˚C	µS/cm	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
09/23/2014 23:10	27000	8.85	6.86	18.28	54.71														
09/24/2014 10:15						50	0.0191	0.0036	0.14	0.027	0.0157	<0.0005	25	0.086	0.46	0.046	0.6	8.02	278
1/15/2015 20:17	1203	11.98	6.87	6.75	28.32														
1/16/2015 10:30						28.5	0.0098	<0.0025	0.104	0.0312	0.0063	<0.0005	18	<0.05	0.57	0.022	0.263	3.1	110
03/11/2015 18:59	1986	9.8	7.11	12.39	125.1														
03/12/2015 09:55						117	0.0078	0.0062	0.134	0.123	0.0008	<0.0005	45	0.301	1.2	0.03	0.078	3.2	8.8
5/11/2015 10:30	178	9.77	6.5	13.12	84.2														
5/12/2015 10:00	>2420																		
5/12/2015 13:05						47.8	0.0068	0.0038	0.0557	0.0296	0.0019	<0.0005	20	<0.05	0.54	0.029	0.132	3.5	31.2
Median	**1594.5**	**9.79**	**6.87**	**12.755**	**69.46**	**48.9**	**0.0088**	**0.0038**	**0.119**	**0.0304**	**0.0041**	**NA**	**22.5**	**0.1935**	**0.555**	**0.0295**	**0.1975**	**3.35**	**70.6**

Site Name:	PRI3																		
Site Description:	Lower Pringle Creek in Pringle Park, just upstream of confluence with Shelton Ditch																		
Sample Collection Date/Time	**E. Coli**	**Diss. Oxygen**	**pH**	**temp**	**Sp. Cond, field**	**Sp. Cond, comp**	**Cu**	**Cu diss**	**Zn**	**Zn diss**	**Pb**	**Pb diss**	**Hardness**	**NH3**	**NO_3-NO_2**	**Ortho P**	**TP**	**BODs**	**TSS**
mm/dd/yyyy HH:MM	MPN/100 mL	mg/L	S.U	˚C	µS/cm	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9/23/2014 23:35	6867	8.34	7.09	18.37	72.57														
9/24/2014 10:40						51.5	0.0124	0.0032	0.0942	0.0096	0.0091	<0.0005	29	<0.050	0.34	0.03	0.426	6.38	154
1/15/2015 20:40	727	11.73	7.09	6.68	46.94														
1/16/2015 10:47						46.7	0.0066	<0.0025	0.0681	0.0174	0.0038	<0.0005	20	<0.050	0.9	0.016	0.206	2.9	76.8
3/11/2015 19:15	154	10.02	7.32	12.41	97.3														
3/12/2015 10:15						103	<0.0025	<0.0025	0.0064	0.0052	<0.0005	<0.0005	41	<0.050	1.71	<0.010	0.028	1.3	3.6
5/11/2015 11:23	228	9.64	6.9	14.07	91.4														
5/12/2015 13:30	1553																		
5/12/2015 13:30						76.6	0.0033	<0.0025	0.0248	0.0108	0.0013	<0.0005	29	<0.050	0.77	0.014	0.084	2.5	22.4
Median	**727**	**9.83**	**7.09**	**13.24**	**81.985**	**64.05**	**0.0066**	**NA**	**0.04645**	**0.0102**	**0.0038**	**NA**	**29**	**NA**	**0.835**	**0.016**	**0.145**	**2.33**	**49.6**

Site Name:	PRI12																		
Site Description:	Upper East Fork Pringle Creek																		
Sample Collection Date/Time	**E. Coli**	**Diss. Oxygen**	**pH**	**temp**	**Sp. Cond, field**	**Sp. Cond, comp**	**Cu**	**Cu diss**	**Zn**	**Zn diss**	**Pb**	**Pb diss**	**Hardness**	**NH3**	**NO_3-NO_2**	**Ortho P**	**TP**	**BODs**	**TSS**
mm/dd/yyyy HH:MM	MPN/100 mL	mg/L	S.U	˚C	µS/cm	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
9/24/2014 0:01	2420	8.09	6.75	15.69	58.93														
9/24/2014 11:20						57.8	0.0028	<0.0025	0.0505	0.0174	0.0005	<0.0005	28	<0.050	0.6	0.045	0.129	4.99	30.8
1/15/2015 21:11	156	10.32	6.7	6.92	89.73														
1/16/2015 9:35						77.2	<0.0025	<0.0025	0.0204	0.0066	0.0006	<0.0005	34	<0.050	2.33	0.011	0.095	<2.0	21.6
3/11/2015 19:49	22	9.67	7.03	12.19	89.1														
3/12/2015 9:15						92.6	<0.0025	<0.0025	0.0065	0.0044	<0.0005	<0.0005	71	<0.050	2.68	<0.010	0.033	<1.00	9.6
5/11/2015 12:05	147	9.47	6.89	13.17	90.97														
5/12/2015 13:55	1414																		
5/12/2015 13:55						83.1	<0.0025	<0.0025	0.0047	0.003	<0.0005	<0.0005	32	<0.050	1.36	<0.010	0.042	1.3	9.6
Median	**156**	**9.57**	**6.82**	**12.68**	**89.42**	**80.15**	**NA**	**NA**	**0.01345**	**0.0055**	**0.00055**	**NA**	**33**	**NA**	**1.845**	**0.028**	**0.0685**	**3.145**	**15.6**

NA= Median not calculated because ≥ 50% of values were censored values.

Data in red exceed applicable water quality criteria (see Table 4).

Table 12.
Stormwater Monitoring Data (RY 2014/15)

Site Name:	Electric[1]																		
Land use Type:	Residential																		
Sample Collection Date/Time	E. Coli	Diss. Oxygen	pH	temp	Sp. Cond, field	Sp. Cond, comp	Cu	Cu diss	Zn	Zn diss	Pb	Pb diss	Hardness	NH3	NO_3-NO_2	Ortho P	TP	BOD5	TSS
mm/dd/yyyy HH:MM	MPN/100 mL	mg/L	S.U	˚C	µS/cm	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1/15/2015 19:35	1046	12.1	6.79	6.42	19.7	26.6													
1/16/2015 10:15							0.0054	0.0029	0.103	0.0603	0.0023	0.0005	14	0.05	0.56	0.043	0.175	2.7	47.2

Site Name:	Hilfiker																		
Land use Type:	Commercial																		
Sample Collection	E. Coli	Diss.	pH	temp	Sp. Cond,	Sp. Cond,	Cu	Cu diss	Zn	Zn diss	Pb	Pb diss	Hardness	NH3	NO_3-NO_2	Ortho P	TP	BOD5	TSS
mm/dd/yyyy HH:MM	MPN/100 mL	mg/L	S.U	˚C	µS/cm	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1/15/2015 19:09	112	11.84	6.39	6.5	25.5														
1/16/2015 10:00						19	0.0075	0.0025	0.0702	0.0431	0.0031	0.001	6	0.107	0.2	0.01	0.097	2.8	34

Site Name:	Salem Industrial																		
Land use Type:	Industrial																		
Sample Collection	E. Coli	Diss.	pH	temp	Sp. Cond,	Sp. Cond,	Cu	Cu diss	Zn	Zn diss	Pb	Pb diss	Hardness	NH3	NO_3-NO_2	Ortho P	TP	BOD5	TSS
mm/dd/yyyy HH:MM	MPN/100 mL	mg/L	S.U	˚C	µS/cm	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
1/15/2015 20:40	156	11.79	6.7	6	156														
1/16/2015 11:18						24.2	0.0066	0.003	0.155	0.13	0.001	0.0005	13	0.05	0.16	0.032	0.168	2	28.4

[1]Due to the velocity and lift of water coming through the pipe at this site, the flow module is unable to detect the height of the water and often doesn't sample; therefore a time paced sampling method is utilized.

Table 13.
Pesticide Monitoring Data (RY 2014/15)

Site Name	Land Use Type	Sample Date	Time	Analyte	Type of Pesticide	Amount Detected (µg/L)	Limit of Quantitation (µg/L)
Electric	Residential	12/4/2014	5:50	No Analytes were detected			
Hilfiker	Commercial	12/4/2014	5:34	No Analytes were detected			
Salem Industrial	Industrial	12/4/2014	6:25	Propiconazole	Halogenated Pesticide	0.64	0.15
Salem Industrial DUP	Industrial	12/4/2014	6:35	Propiconazole	Halogenated Pesticide	1.7	0.15

Note: Results only given for those analytes that were detected. See Attachment A for full suite of compounds that were analyzed.

Table 14.

Priority Dry Weather Outfall/Manhole Screening Data (RY 2014/15)

Site Info			Flow		Field Screening					Laboratory Testing						notes
Priority Outfall	Surogate Location	Date/Time	Flow Present?	Est. flow	Temp	pH	Specific Cond.	Turbidity	Chlorine (Cl)	E. coli	Fluoride (Fl)	Detergents	Potassium (K)	Sodium (NA)	Amonia (NH3)	
				gpm	°C	S.U	µS/cm	NTU	mg/L	(MPN/100 mL)	mg/L	mg/L	mg/L	mg/L	mg/L	
D51470205	D51470203*	09/10/2014 09:29	No	0	19.10	7.11	245.60	2.92	0.00							Stagnant Water
D54470205		09/10/2014 10:08	No													
D54486217		09/10/2014 10:30	Yes	500	17.10	7.35	71.00	2.58	0.00	365						Green/brown benthic growth
D51486216		09/10/2014 10:55	Yes	10	18.30	7.52	60.30	1.44	0.00	184						Brown benthic growth
D51488236		09/10/2014 11:23	No													
D51488203		09/10/2014 11:30	No													
D51486201	D51486211*	09/10/2014 11:50	No		19.80	6.80	90.60	6.76	0.50	133	1.13	< 0.25	1.84	7.73	< 0.5	Something living in pipe (rat?). Stagnant water- didn't call ES.
D48486207		09/10/2014 12:05	No		18.20	7.05	99.80	38.50	0.50	488	0.97	< 0.25	2.59	8.37	< 0.5	Stagnant Water
D42476203		09/10/2014 12:55	No													
D45476207		09/10/2014 13:05	Yes	250	17.60	7.95	270.00	16.80	0.80	517						Did not collect IDDE sample as 2012 sample did not reveal anything
D45466212		09/22/2014 09:00	Yes	<5	18.88	7.99	196.00	5.71	0.50	13	0.13		2.22	8.06	< 0.5	
D48464203		09/22/2014 09:40	No													
D48464249		09/22/2014 09:45	No													
D45464207	D45464206*	09/22/2014 10:00	Yes		17.70	7.67	69.80	5.41	0.50	< 1	0.58	< 0.25	0.78	6.52	< 0.5	
D42468235		09/22/2014 10:30	No													
D48460229	D48460230	09/22/2014 11:05	Yes	30	18.80	7.92	287.00	5.89			0.14		4	12.50	< 0.5	
D42468244		09/22/2014 12:05	Yes	100	19.00	7.61	110.10	9.31	0.50	42	0.16		0.73	6.69	< 0.5	
D42468232		09/22/2014 12:30	No													
D42466237	D42466227*	09/22/2014 12:45	Yes	25	20.80	7.25	81.00	3.32	0.50	< 1	0.47	< 0.25	0.74	7.43	< 0.5	
D54494201	D54494205*	09/22/2014 13:15	No													
D39460252		10/08/2014 08:45	Yes	<5	17.50	6.24	69.40	1.61	0.00	140						
D39456229		10/08/2014 09:30	Yes	<5	15.80	6.24	77.50	1.23								
D42480215		10/08/2014 10:15	Yes	30	17.50	6.69	56.00	0.92	4.00	< 1	0.76	< 0.25	0.48	6.15	< 0.5	
D42480223		10/08/2014 10:35	Yes	75	17.10	6.51	98.50	2.27	1.00	> 2420	0.73	< 0.25	1.42	8.50	0.98	Duplicate sample taken
D42480205		10/08/2014 11:00	No													
D42482223	D42482228	10/08/2014 11:30	Yes	<5	19.40	6.70	92.60	6.10	0.50	2420						
D42482212	D42482210	10/08/2014 11:45	No													
D42482224	D42482211	10/08/2014 11:50	No													
D36472203	D36472227	10/08/2014 12:15	No													
D30470203	D30470204	10/08/2014 13:00	No													
D42456216		10/09/0214 9:00														Could not locate w/o traffic control
D39478271		10/09/2014 09:40	No		17.10	6.85	126.80	11.60	0.00							Stagnant Water (Slight sheen on surface of water). Biofilm
D42476279	D39476232	10/09/2014 10:00	No													
D45476217		10/09/2014 10:50	Yes	10	18.20	7.21	194.60	4.63	0.00	144						
D45468241		10/09/2014 11:20	No													

Data in red exceed action levels, see Dry Weather Outfall and Illicit Discharge Screening Plan for more information.

* Stormwater Manhole.

Table 15.

Priority Dry Weather Screening Data - Follow Up *E. coli* Sampling (RY 2014/15)

Clark Creek			
Sample Location (Listed Upstream to Downstream)	**Sample Date**	**E.Coli (mpn/100mL)**	**Notes**
D42466226 (MH)	08/25/2014 08:32	<10	Directly upstream of Stormwater sampling manhole
D42466227 (MH)	08/25/2014 08:25	<10	Stormwater Sampling manhole (outfalls to creek shortly after this)
D42466226 (MH)	01/29/2015 10:23	<10	Directly upstream of Stormwater sampling manhole
D42466227 (MH)	01/29/2015 10:17	85	Stormwater Sampling manhole (outfalls to creek shortly after this)
Clark HS Upstream	01/29/2015 10:05	30	Sample taken from creek
Clark HS Downstream	01/29/2015 10:00	134	Sample taken from creek
D42468244	01/29/2015 10:10	187	Sample taken from outfall (outfall abt. 50 ft below Clark HS Downstream site)
CLK12	02/23/2015 10:15	10	Continuous WQ Monitoring station (sample taken from creek)
D42466221 (MH)	02/23/2015 10:45	<10	Just north of 226&227, different line that outfalls into creek above Clark HS Upstream site
D42466226 (MH)	02/23/2015 10:27	369	Directly upstream of Stormwater sampling manhole
D42466227 (MH)	02/23/2015 10:32	1022	Stormwater Sampling manhole (outfalls to creek shortly after this)
Clark HS Upstream	02/23/2015 10:55	30	Sample taken from creek
Clark HS Downstream	02/23/2015 11:00	395	Sample taken from creek
D42468244	02/23/2015 11:03	24200	Sample taken from outfall (outfall abt. 50 ft below Clark HS Downstream site)
CLK1	02/23/2015 11:22	1223	Continuous WQ Monitoring station (sample taken from creek)
D42466227 (MH)	03/04/2015 09:25	161	Stormwater Sampling manhole (outfalls to creek shortly after this)
Clark HS Upstream	03/04/2015 09:46	10	Sample taken from creek
Clark HS Downstream	03/04/2015 09:43	20	Sample taken from creek
D42468244	03/04/2015 09:40	<10	Sample taken from outfall (outfall abt. 50 ft below Clark HS Downstream site)
CLK1	03/04/2015 10:05	63	Continuous WQ Monitoring station (sample taken from creek)
D42466227 (MH)	03/10/2015 07:35	414	Stormwater Sampling manhole (outfalls to creek shortly after this)
Clark HS Downstream	03/10/2015 08:00	31	Sample taken from creek
D424468244	03/10/2015 07:50	355	Sample taken from outfall (outfall abt. 50 ft below Clark HS Downstream site)
CLK1	03/10/2015 08:25	20	Continuous WQ Monitoring station (sample taken from creek)
D42466227 (MH)	03/17/2015 08:07	487	Stormwater Sampling manhole (outfalls to creek shortly after this)
D42466227 (MH) Dup	03/17/2015 08:10	683	Stormwater Sampling manhole (outfalls to creek shortly after this)
CLK1	03/17/2015 08:20	233	Continuous WQ Monitoring station (sample taken from creek)
D42466226 (MH)	04/29/2015 10:08	683	Directly upstream of Stormwater sampling manhole
D42466227 (MH)	04/29/2015 10:18	691	Stormwater Sampling manhole (outfalls to creek shortly after this)
D42466226 (MH)	04/29/2015 10:24	754	Directly upstream of Stormwater sampling manhole
D42466227 (MH)	04/29/2015 10:32	1281	Stormwater Sampling manhole (outfalls to creek shortly after this)
D42466227 (MH)	06/18/2015 08:53	393	Stormwater Sampling manhole (outfalls to creek shortly after this)
D42468244	06/18/2015 09:00	97	Sample taken from outfall (outfall abt. 50 ft below Clark HS Downstream site)

MH = Manhole; HS = High School Data in red exceed single sample criterion of 406 MPN/100 mL. See Table 4 for more information.

Table 15.

Priority Dry Weather Screening Data - Follow Up *E. coli* Sampling (RY 2014/15)

North Salem - Willamette River Outfalls			
Sample Location (Listed Upstream to Downstream)	**Sample Date**	**E.Coli (mpn/100mL)**	**Notes**
D42480223	08/25/2014 09:00	250	IDDE priority outfall
D42480217 (MH)	08/25/2014 09:11	240	MH upstream of D42480222
D45478201 (MH)	08/25/2014 09:40	120	MH upstream of D42480217
D45478202 (MH)	08/25/2014 09:50	20	MH directly upstream of D45478201
D45478639	08/25/2014 10:25	<10	CB directly upstream of D45478202
D45478203 (MH)	08/25/2014 10:30	<10	MH directly upstream of D45478639
D45478205 (MH)	08/25/2014 10:36	<10	MH directly upstream of D45478203
D42480214 (MH)	01/29/2015 10:47	<10	Manhole directly upstream and in same apartment complex as 222
D42480222 (MH)	01/29/2015 10:40	408	Manhole in apartment complex, directly upstream of outfall into Willamette River
D42480222 (MH)	02/23/2015 12:15	1782	Manhole in apartment complex, directly upstream of outfall into Willamette River
D45476207	03/04/2015 10:35	1515	Outfall into Mill Creek, upstream of Willamette River
D42480222 (MH)	03/04/2015 10:50	5172	Manhole in apartment complex, directly upstream of outfall into Willamette River
D45476207	03/10/2015 08:50	110	Outfall into Mill Creek, upstream of Willamette River
D42480222 (MH)	03/10/2015 09:10	305	Manhole in apartment complex, directly upstream of outfall into Willamette River
D45476207	03/17/2015 08:55	368	Outfall into Mill Creek, upstream of Willamette River
D42480222 (MH)	03/17/2015 09:15	987	Manhole in apartment complex, directly upstream of outfall into Willamette River
D42480222 (MH) Dup	03/17/2015 09:20	2603	
D45476207	06/18/2015 09:20	146	Outfall into Mill Creek, upstream of Willamette River
D42480222 (MH)	06/18/2015 09:21	712	Manhole in apartment complex, directly upstream of outfall into Willamette River

MH = Manhole; CB = Catch Basin Data in red exceed single sample criterion of 406 MPN/100 mL. See Table 4 for more information.

Table 16.

Pringle Creek Pilot Project - *E. coli* Sampling (RY 2014/15)

Pringle Creek Pilot Projects - Goats			
Sample Location (Listed Upstream to Downstream)	**Sample Date**	**E.Coli (mpn/100mL)**	**Notes**
Pre- Goats			
Pringle Crk Community up 1	05/11/2015 08:25	20	
Pringle Crk community down 1	05/11/2015 08:38	119	
Pringle Crk Community up 2	05/11/2015 08:55	109	
Pringle Crk community down 2	05/11/2015 09:10	189	
Goats			
Pringle Crk Community up 1	05/15/2015 10:05	214	
Pringle Crk Community down 1	05/15/2015 10:32	96	
Pringle Crk Community up 2	05/15/2015 10:50	119	
Pringle Crk community down 2	05/15/2015 11:05	119	
Post-Goats			
PCC Up 1	05/26/2015 13:20	52	
PCC Up 1 Dup	05/26/2015 13:20	52	
PCC Up 1 Rep	05/26/2015 13:25	63	
PCC Down 1	05/26/2015 13:45	52	
PCC Up 2	05/26/2015 13:55	51	
PCC Down 2	05/26/2015 14:10	41	

Table 17.
Catch Basin Sediment Sampling Results (RY 2014/15)

Analyte	Units	Commercial			Residential			Industrial		
		minor street	moderate street	major street	minor street	moderate street	major street	minor street	moderate street	major street
Ag- Silver	mg/kg	**0.37**	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25
As - Arsenic	mg/kg	**8.22**	**3.02**	**2.58**	**4.92**	**2.57**	**2.16**	**5.32**	**3.68**	**6.31**
Cd - Cadmnium	mg/kg	**1.3**	**0.5**	< 0.25	**1.38**	**0.3**	< 0.25	**0.46**	**0.8**	**0.64**
Cr - Chromium	mg/kg	**24.2**	**36**	**15.9**	**11.9**	**25.4**	**15.6**	**20.4**	**24.6**	**103**
Cu - Copper	mg/kg	**86.6**	**67.4**	**50.9**	**33.6**	**57.8**	**31.3**	**59.2**	**77.2**	**245**
K - Potassium	mg/kg	**380.1**	**566**	**397.9**	**525**	**817**	**372**	**442.6**	**582.5**	**761**
Mo - Molybdenum	mg/kg	**3.72**	**2.4**	**1.99**	**0.72**	**1.46**	**0.89**	**2.3**	**2.22**	**10.9**
Ni - Nickel	mg/kg	**17**	**18.1**	**16.2**	**15.4**	**16**	**15.6**	**18.5**	**23.1**	**72.2**
Pb - Lead	mg/kg	**69.2**	**97.6**	**14.8**	**56**	**42.2**	**9.02**	**19.8**	**73.2**	**39.3**
Se - Selenium	mg/kg	**1.81**	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	**1.24**	< 1.00
Zn - Zinc	mg/kg	**284**	**319**	**162**	**351**	**314**	**130**	**176**	**315**	**384**
Hg - Mercury	mg/kg	**0.0408**	**0.0295**	**0.04**	**0.054**	**0.0132**	**0.0107**	**0.018**	**0.0587**	**0.0294**
Total Solids	mg/kg	**359000**	**382000**	**688000**	**586000**	**691000**	**681000**	**718000**	**555000**	**744000**
Terphenyl-d14	PERCENT	49	127	112	139	315	107	129	0	112
Naphthalene	UG/KG	14.1	**101**	**62.7**	15.6	**39.2**	6.51	**25.7**	**298**	**123**
2-Methylnaphthalene	UG/KG	**67.2**	**173**	**21**	8.43	**19.6**	4.35	13.4	**242**	**36.5**
1-Methylnaphthalene	UG/KG	**41**	**106**	12.7	6.39	12.4	2.47	8.33	125	**16.5**
Acenaphthylene	UG/KG	14.1	**25**	10	3.46	**19.8**	2.58	8.22	**1710**	**40.7**
Acenaphthene	UG/KG	11.2	**67.1**	**47.2**	**31**	**30.7**	2.24	**42.1**	117	**38**
Fluorene	UG/KG	17	**131**	**40.2**	**33.3**	**34**	3.57	**34.3**	**231**	**38.4**
Phenanthrene	UG/KG	**28.7**	**440**	**237**	**336**	**243**	**31.9**	**122**	**825**	**238**
Anthracene	UG/KG	16.8	**112**	**29**	**43.6**	**40.2**	5.27	**28.2**	**498**	**45.8**
Fluoranthene	UG/KG	**44.6**	**534**	**271**	**426**	**752**	**58.2**	**308**	**5800**	**411**
Pyrene	UG/KG	**46.9**	**607**	**324**	**392**	**808**	**72**	**336**	**9880**	**556**
Benzo(a)anthracene	UG/KG	**19.6**	**85.1**	**78.8**	**118**	**272**	12	**133**	**2500**	**131**
Chrysene	UG/KG	**24.2**	**159**	**94.9**	**196**	**471**	**33.3**	**163**	**3250**	**162**
Benzo(b)fluoroanthene	UG/KG	**30**	**191**	**165**	**178**	**479**	4.94	**281**	**4470**	**303**
Benzo(k)fluoranthene	UG/KG	8.65	9.31	5.99	9.17	**171**	6.84	**106**	**1740**	6.75
Benzo(a)pyrene	UG/KG	**22.1**	**129**	**104**	**130**	**282**	3.38	**158**	**4600**	**181**
Indeno(1,2,3-c,d)pyrene	UG/KG	10.5	**49.1**	**52.2**	**45.3**	**112**	5.34	**74.4**	**3140**	**89.2**
Dibenzo(a,h)anthracene	UG/KG	6.2	6.67	4.29	6.57	4.85	4.9	4.72	**652**	4.84
Benzo(g,h,i)perylene	UG/KG	**19.3**	**119**	**114**	**64.2**	**166**	5.34	**127**	**4200**	**200**
TPH-Diesel	MG/KG	**1010**	**750**	**380**	418	**477**	**413**	242	**469**	**584**
o-Terphenyl	PERCENT	0	0	0	0	0	0	0	0	0
Octacosane	PERCENT	0	0	0	0	0	0	0	0	0
Percent Moisture	PERCENT	48.3	50.5	22.9	49.8	31.5	33.7	29.7	40.7	32.6

Results in **BOLD** exceed the reporting limit for that Analyte (reporting limits for each site vary based on dilution factor). See Attachment F for full analytical report. See Attachment E for Standard Operating Procedure which describes site information.

Table 18.
Saddle Club Subsurface Gravel Treatment Wetland Data (RY 2014/15)

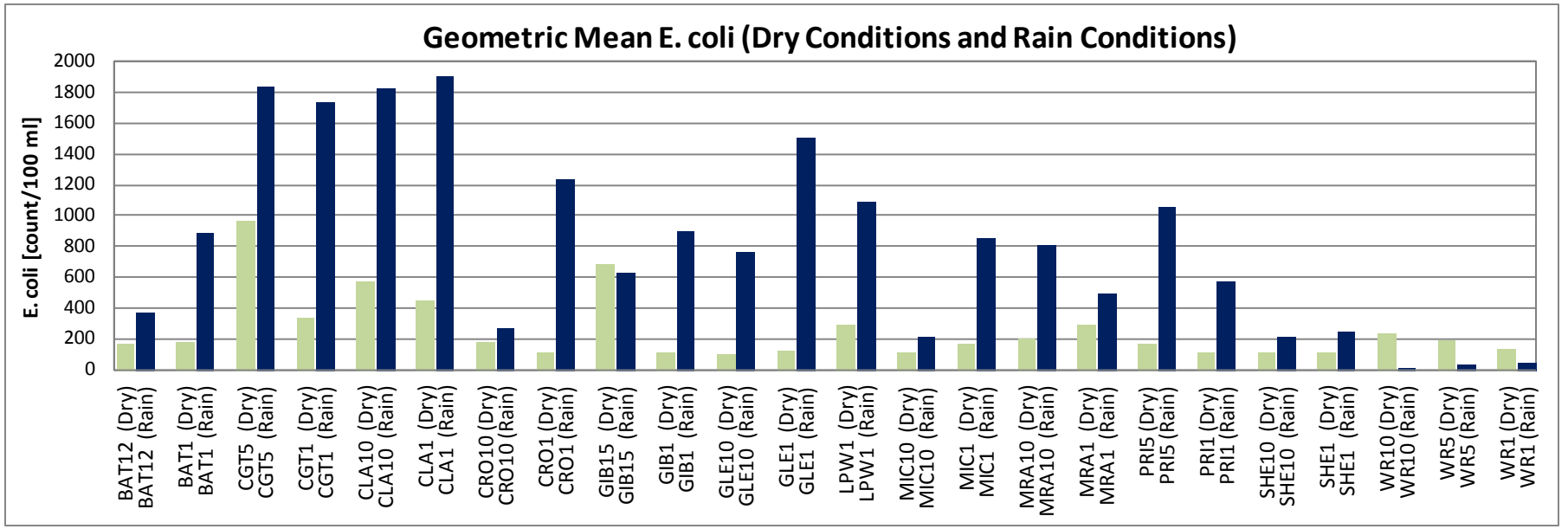
Saddle Club- IN	E. coli	cond	DO	temp	pH	Cu	Zn	Cu (Dis)	Zn (Dis)	BOD5	Cond (comp)	Hard	NH3	NO3/NO2	Ortho P	Pb	(Pb Dis)	TP	TSS
Date/Time	MPN/100 mL	uS/cm	mg/L	°C	S.U	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
09/23/2014 22:40	649	140.9	7.04	19.7	7.06														
09/24/2014 00:25	1439	19	9.16	18.6	6.81														
09/24/2014 11:40						0.0171	0.0296	0.0144	0.0233	5.1	35.4	19	0.132	0.25	0.244	<0.0005	<0.0005	0.158	89.6
01/15/2015 18:35	12	66.5	11.49	6.28	6.58														
01/15/2015 20:04	13	31.1	11.64	5.89	6.86														
1/16/2015 9:21						0.004	0.0528	<0.0025	0.0324	2.1	28.6	12	<0.05	0.48	0.018	0.0006	<0.0005	0.079	19.6

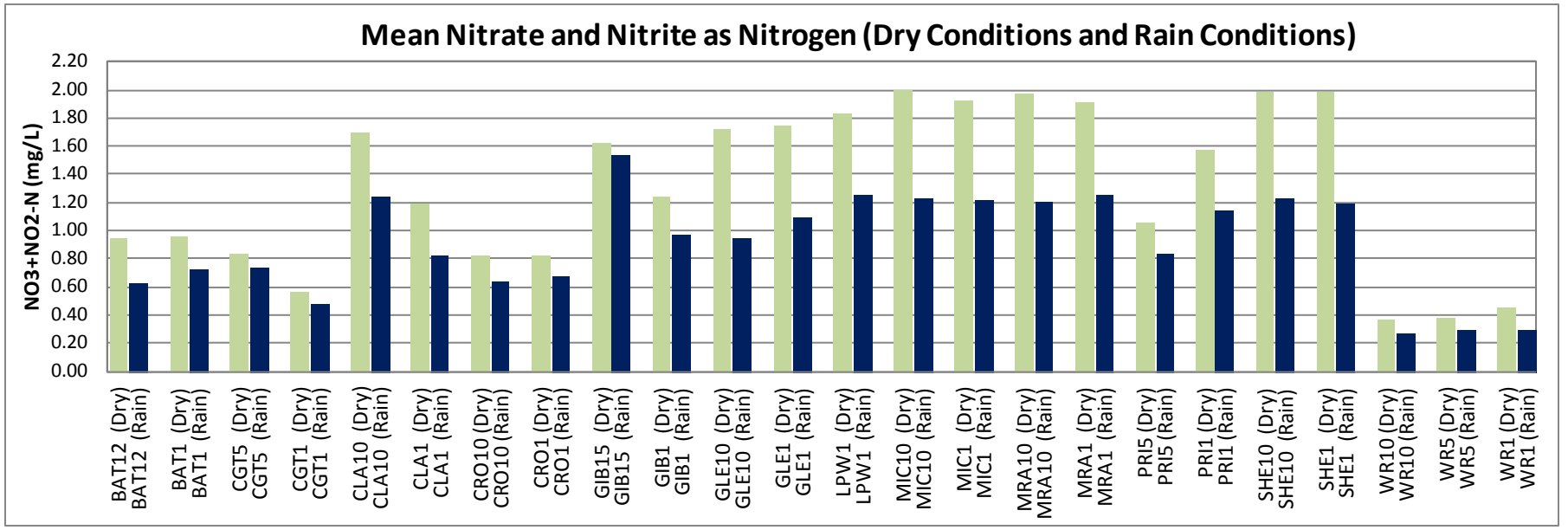
Saddle Club- OUT	E. coli	cond	DO	temp	pH	Cu	Zn	Cu (Dis)	Zn (Dis)	BOD5	Cond (comp)	Hard	NH3	NO3/NO2	Ortho P	Pb	Pb (Dis)	TP	TSS
Date/Time	MPN/100 mL	uS/cm	mg/L	°C	S.U	mg/L	mg/L	mg/L	mg/L	mg/L	uS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
09/24/2014 09:30	>2420	No Water in the Outlet																	
09/24/2014 09:35	>2420	No Water in the Outlet																	
09/24/2014 11:50	>2420					0.0264	0.017	0.0248	0.017	8.7	253	110	<0.05	0.05	0.059	<0.0005	<0.0005	0.095	4.2
01/15/2015 18:41	<1	117.6	1.27	7.5	6.32														
01/15/2015 20:15	<1	121.6	0.88	7.73	6.38														
01/16/2015 09:06	<1					0.0108	0.005	0.0098	0.0036	2	104	54	<0.05	0.06	0.141	<0.0005	<0.0005	0.208	0.4

Note: Results from 9/24/2014 show an increase in E. coli bacteria at the outlet; this is likely due in part to being a first flush event of the season and the basin was completely dry before the storm.

Figure 2

Monthly Instream Mean Value Comparison for Dry and Rain Conditions (RY 2014/15)

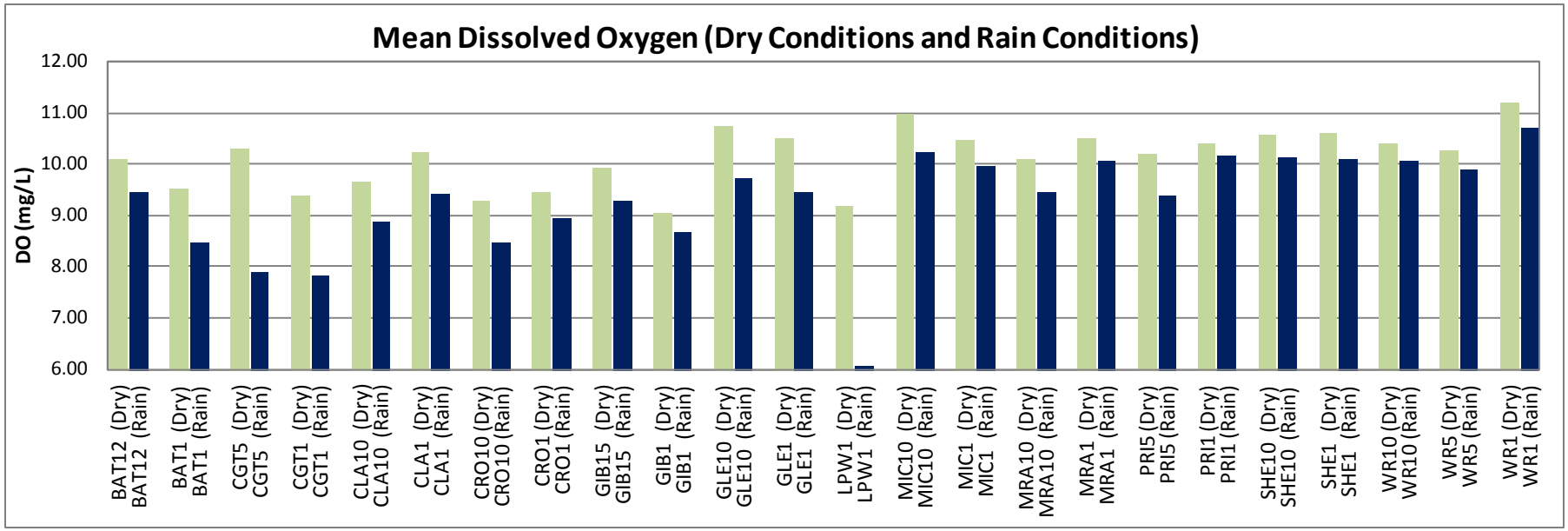


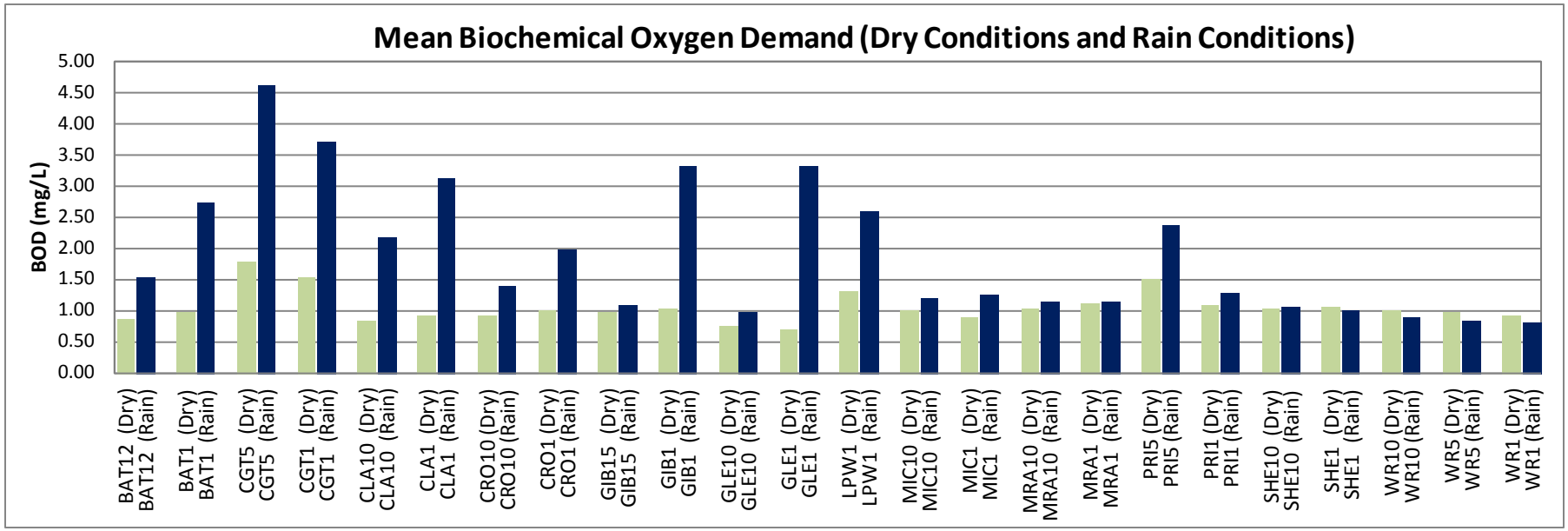


Dry conditions defined as less than 0.05 inches of rainfall in the 24 hours prior to sample collection; **rain** conditions defined as greater than or equal to 0.05 inches of rainfall in the 24 hours prior to sample collection.

Figure 2

Monthly Instream Mean Value Comparison for Dry and Rain Conditions (RY 2014/15)





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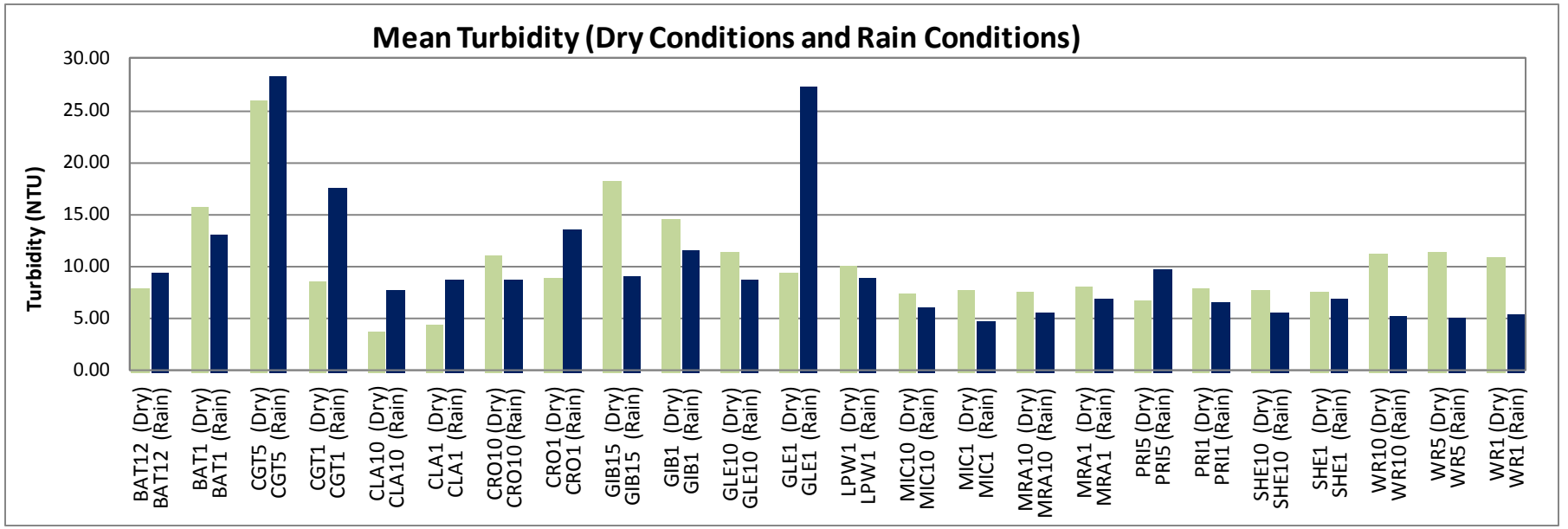
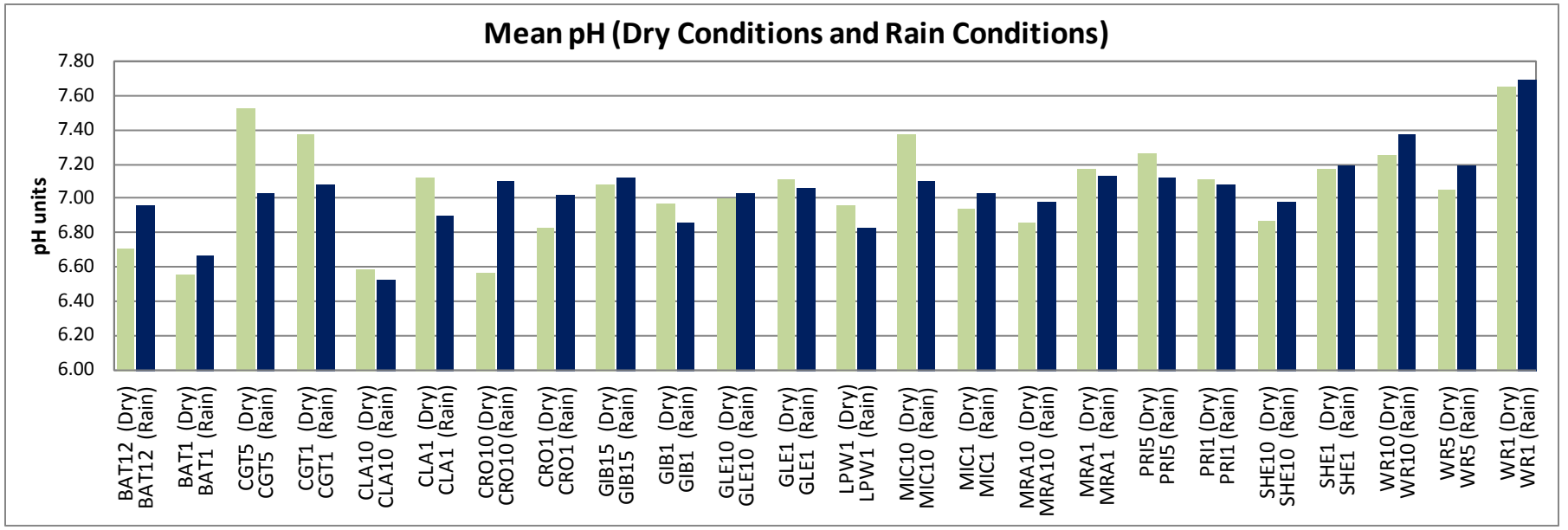
Monthly Instream Mean Value Comparison for Dry and Rain Conditions (RY 2014/15)

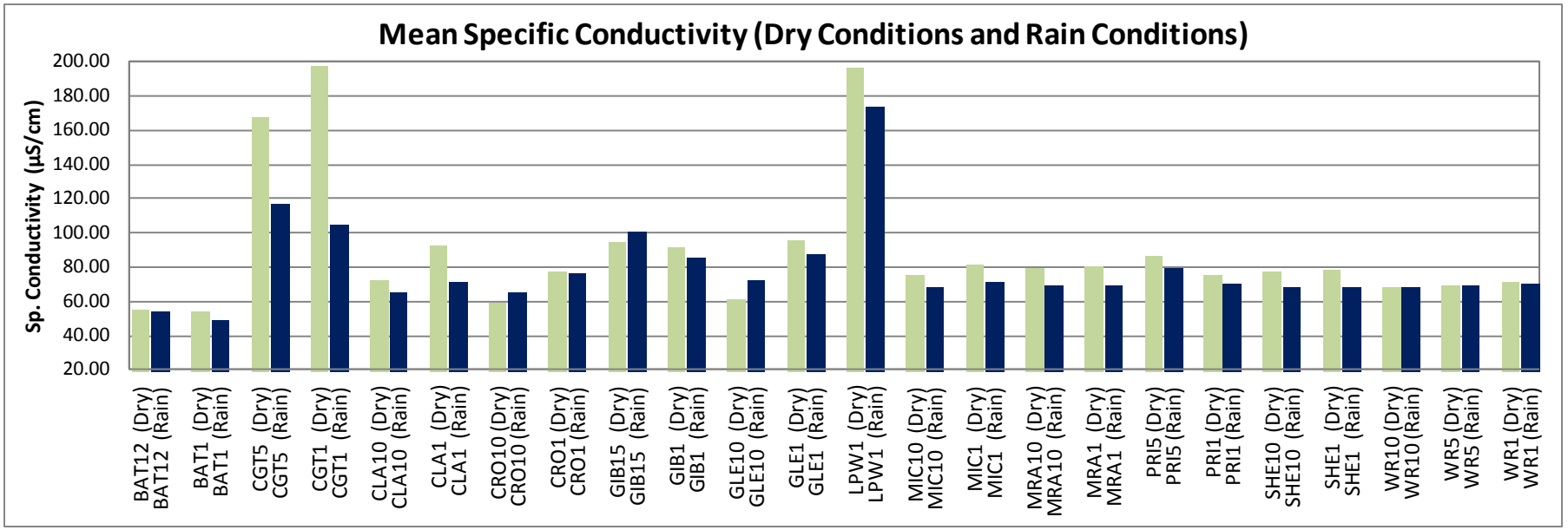




Dry conditions defined as less than 0.05 inches of rainfall in the 24 hours prior to sample collection; **rain** conditions defined as greater than or equal to 0.05 inches of rainfall in the 24 hours prior to sample collection.

Figure 2

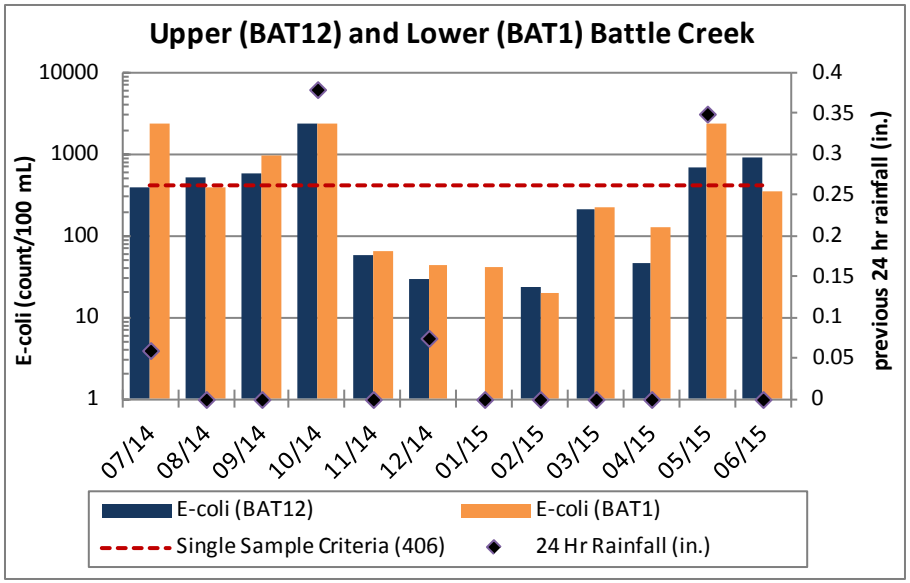
Monthly Instream Mean Value Comparison for Dry and Rain Conditions (RY 2014/15)

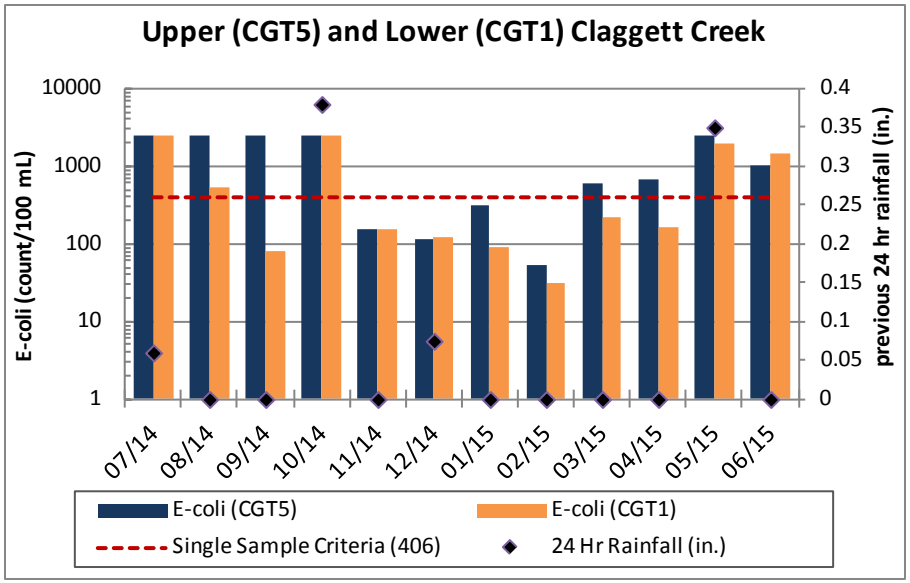


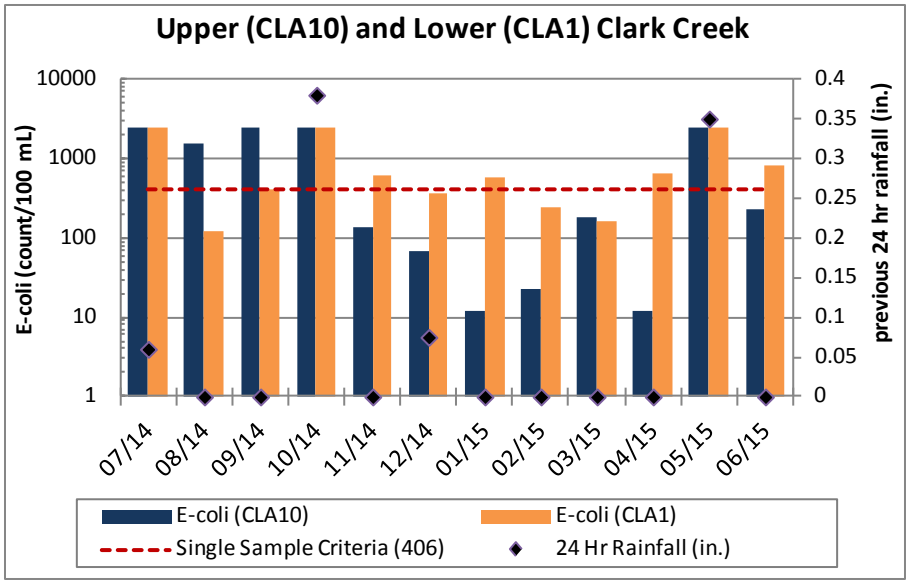
Dry conditions defined as less than 0.05 inches of rainfall in the 24 hours prior to sample collection; **rain** conditions defined as greater than or equal to 0.05 inches of rainfall in the 24 hours prior to sample collection.

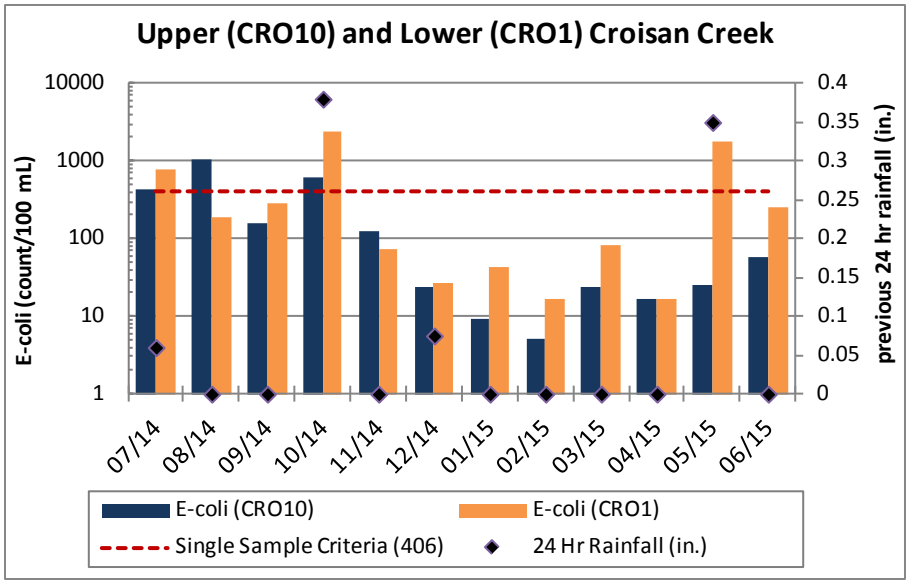
Figure 3

Monthly Instream E. Coli Upstream / Downstream Site Comparison (RY 2014/15)





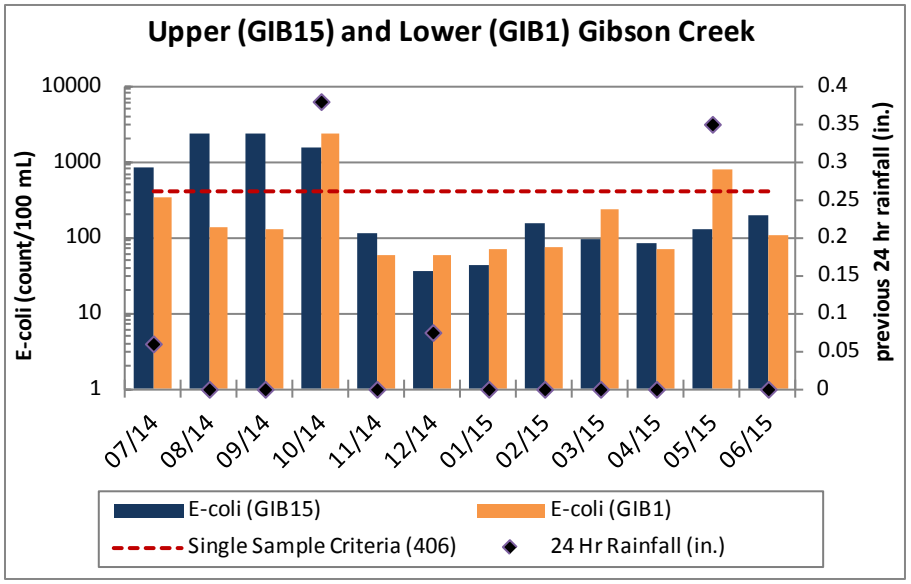


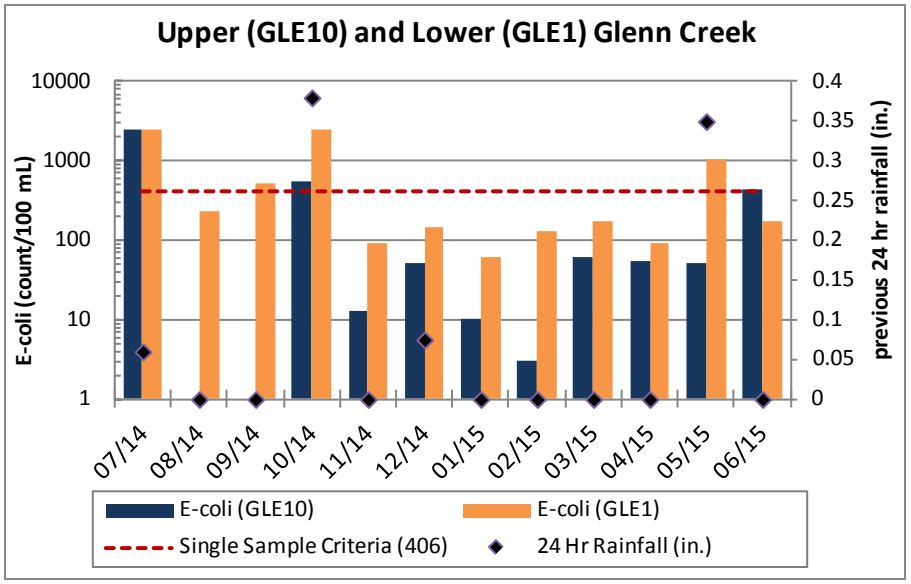


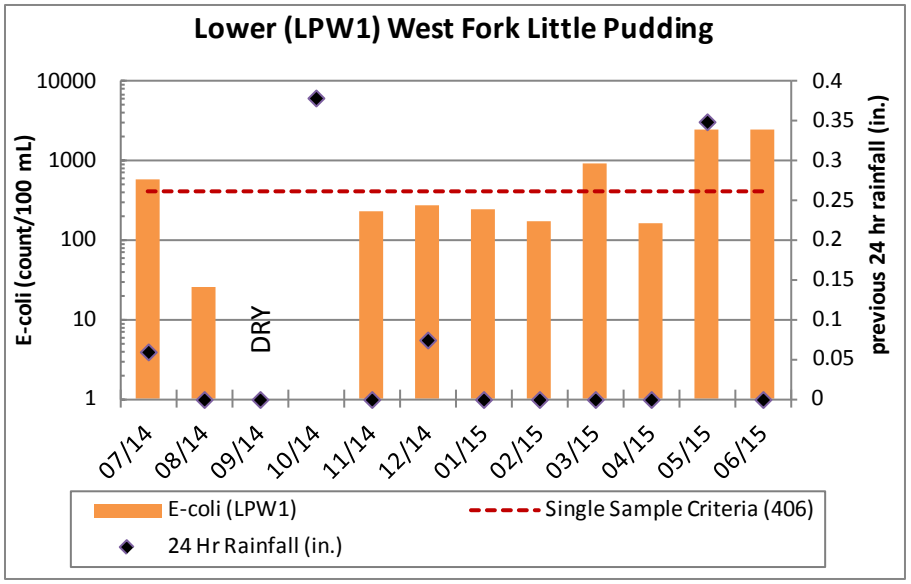
If 24 hour rainfall depth prior to sample collection differed between upstream and downstream sites, the average rainfall of the two sites was used.

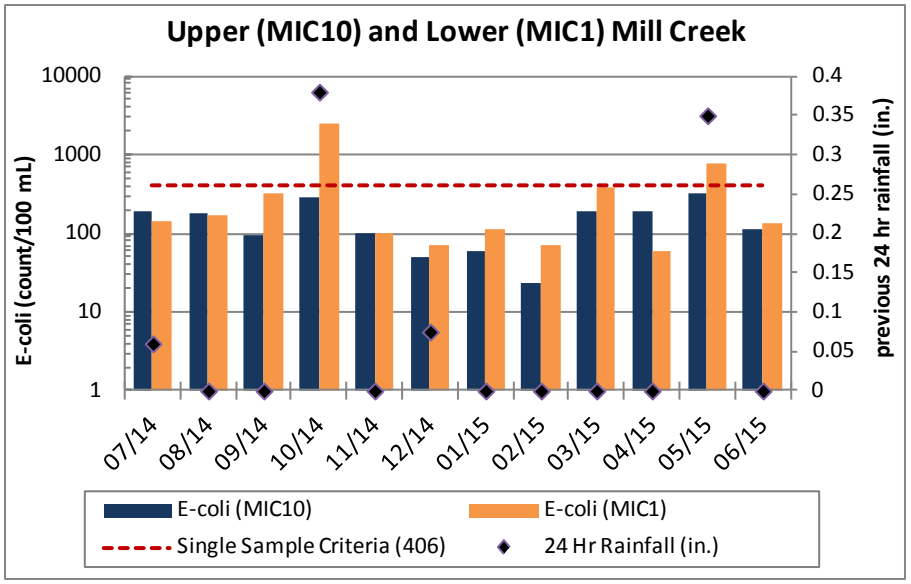
Figure 3

Monthly Instream E. Coli Upstream / Downstream Site Comparison (RY 2014/15)





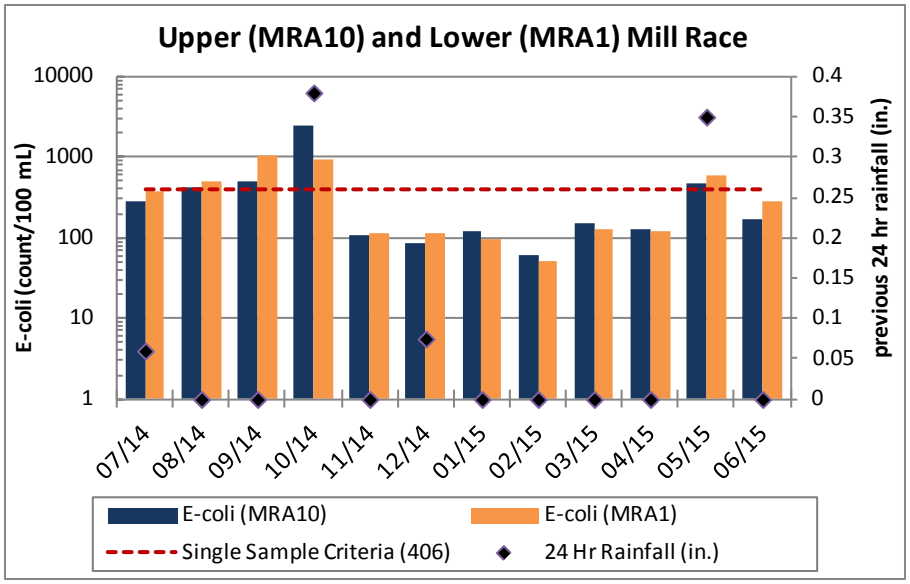


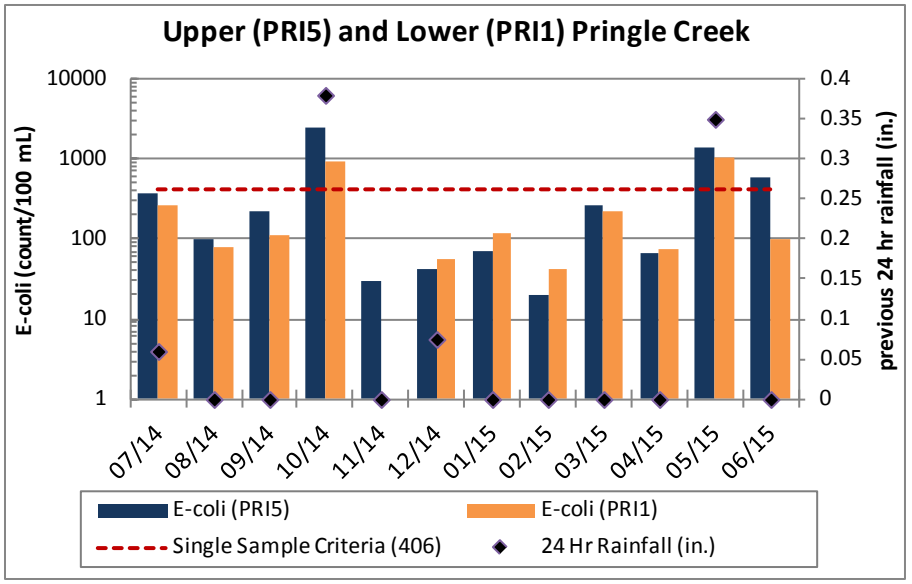


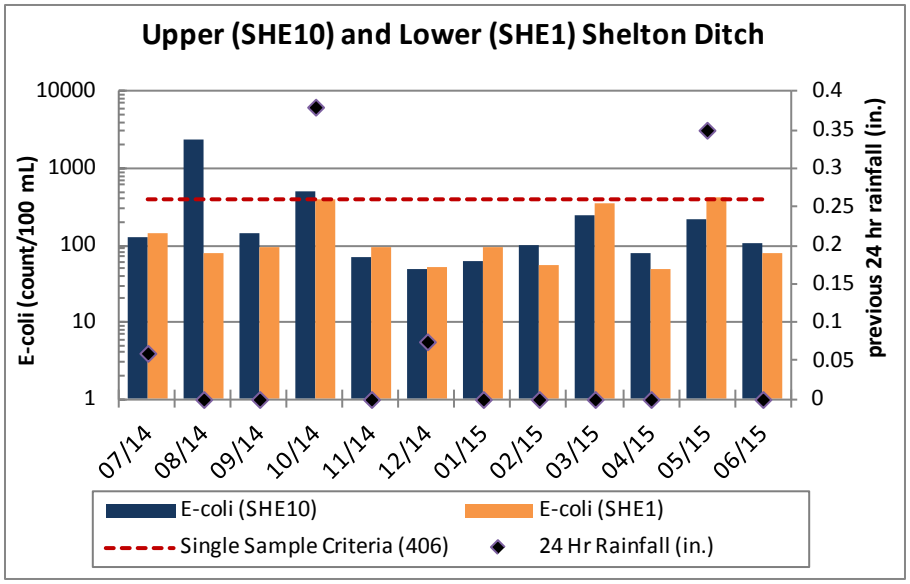
If 24 hour rainfall depth prior to sample collection differed between upstream and downstream sites, the average rainfall of the two sites was used.

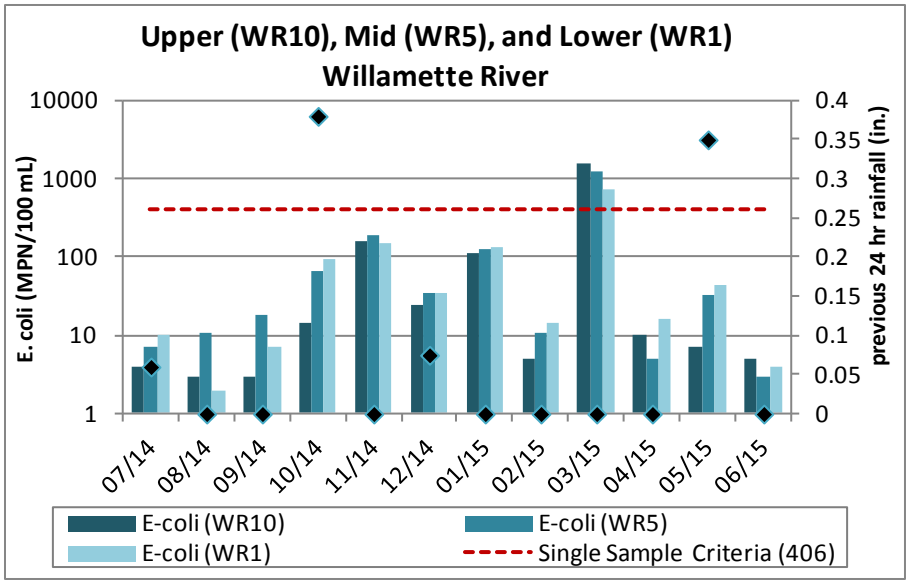
Figure 3

Monthly Instream E. Coli Upstream / Downstream Site Comparison (RY 2014/15)





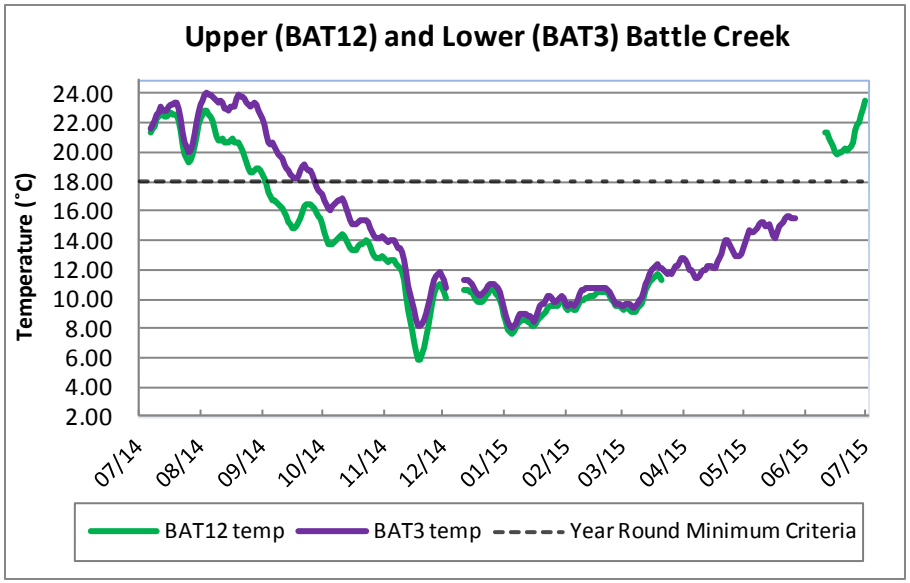


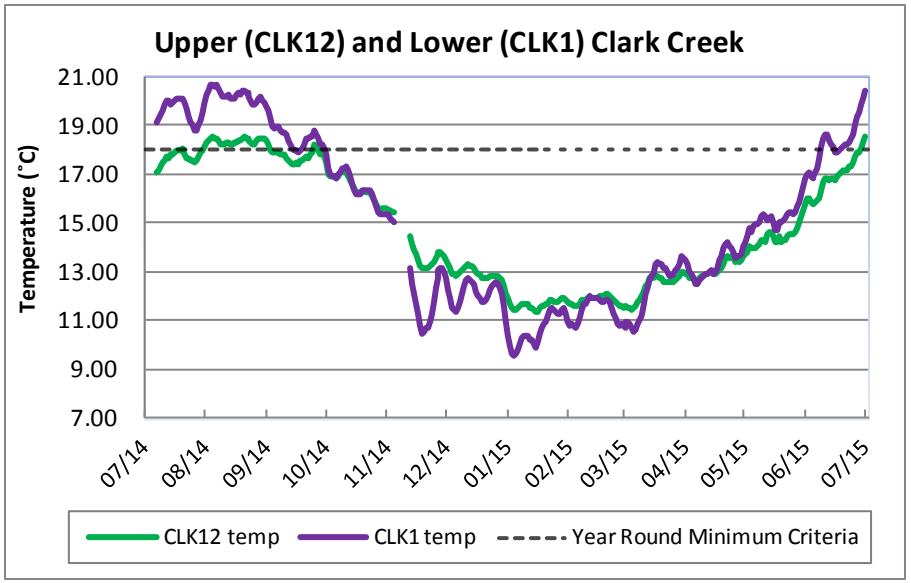


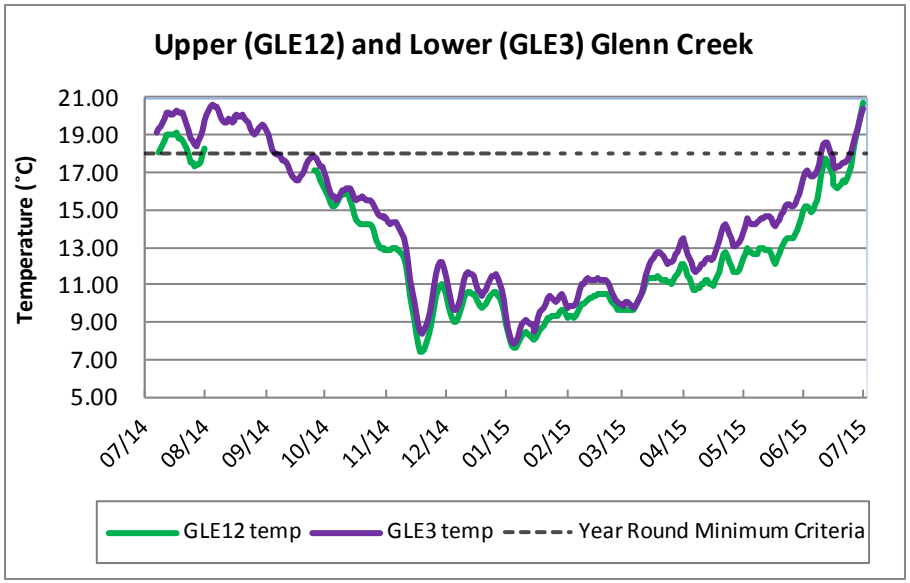
If 24 hour rainfall depth prior to sample collection differed between upstream and downstream sites, the average rainfall of the two sites was used.

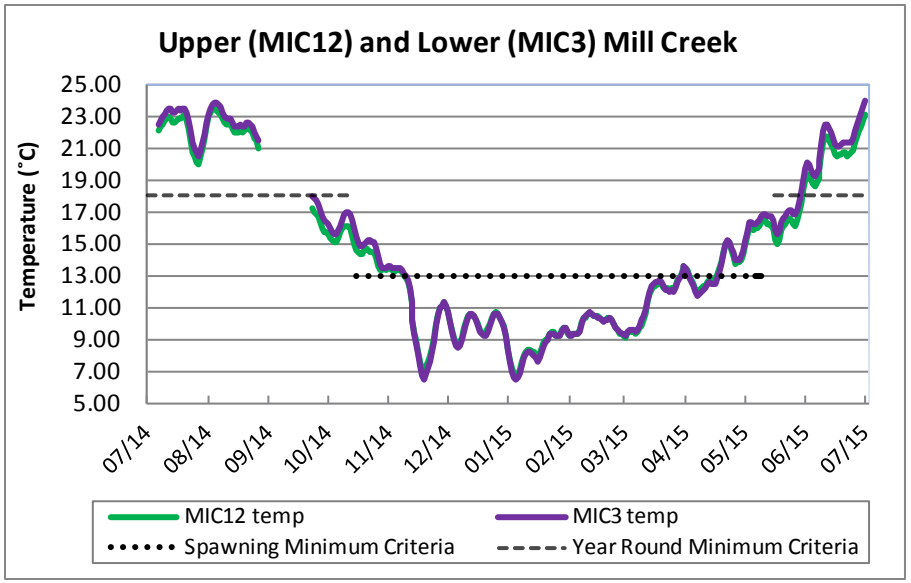
Figure 4

Continuous Instream Temperature 7-Day Moving Average Maximum (RY 2014/15)









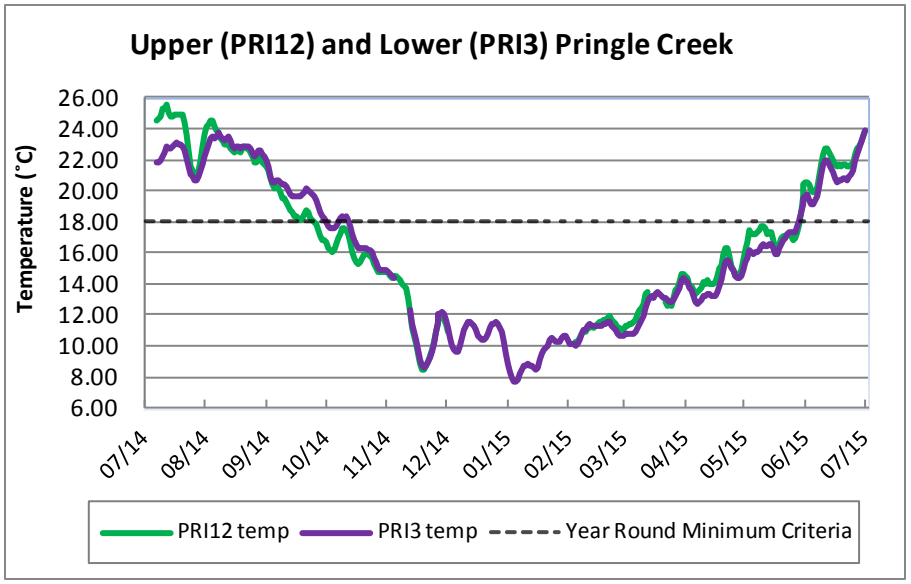
Presented temperature data consists of A grade data with greater than 80% of data points collected per day.

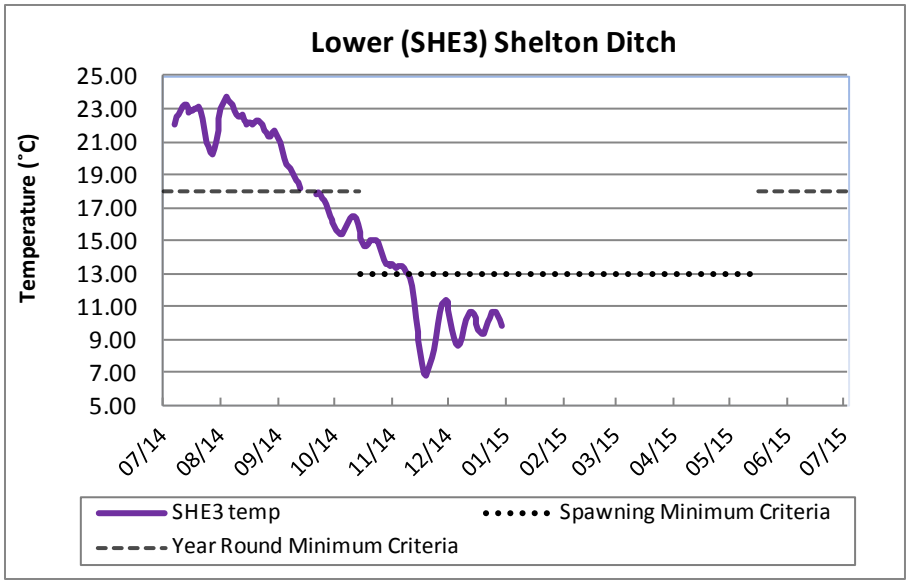
Temperature Criteria as defined in OAR 340-041-0028 and OAR-340-0340, Tables 340A and 340B.

- Spawning Minimum Criteria for applicable streams may not exceed 7-day average maximum of 13˚C.
- Year Round Minimum Criteria may not exceed 7-day average maximum of 18˚C.

Figure 4

Continuous Instream Temperature 7-Day Moving Average Maximum (RY 2014/15)





Note: Shelton Ditch water quality datasonde was removed January 2015 due to upcoming bridge removal and will not be replaced until December 2015.

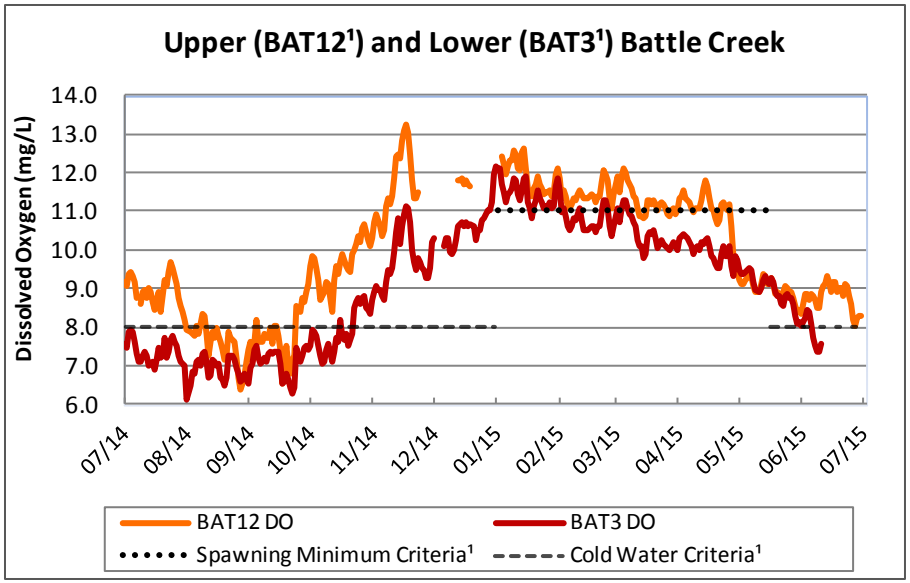
Presented temperature data consists of A grade data with greater than or equal to 80% of data points collected per day.

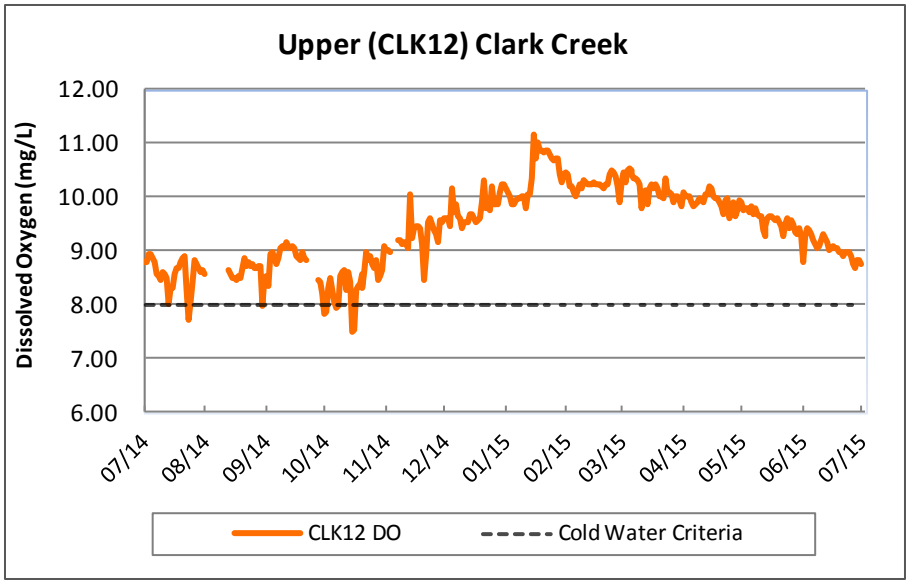
Temperature Criteria as defined in OAR 340-041-0028 and OAR-340-0340, Tables 340A and 340B.

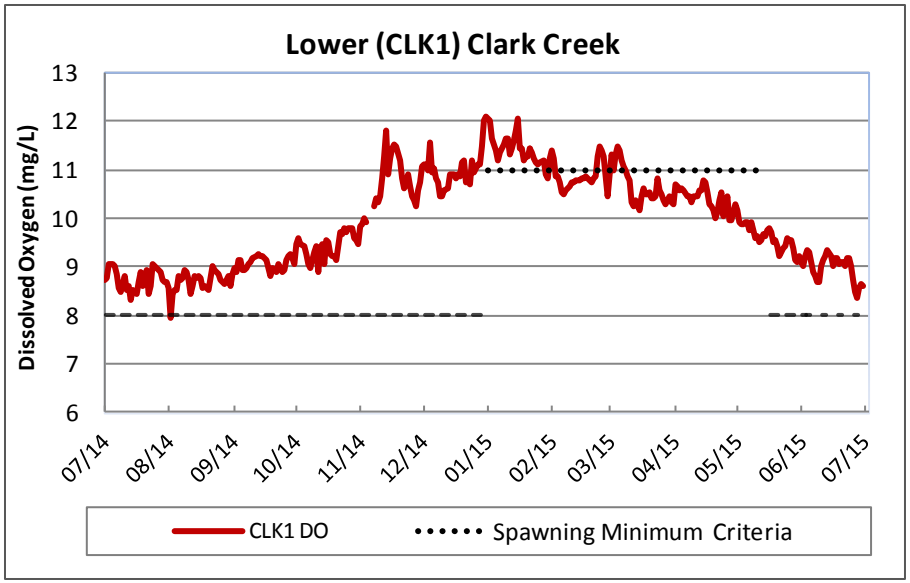
- Spawning Minimum Criteria for applicable streams may not exceed 7-day average maximum of 13˚C.
- Year Round Minimum Criteria may not exceed 7-day average maximum of 18˚C.

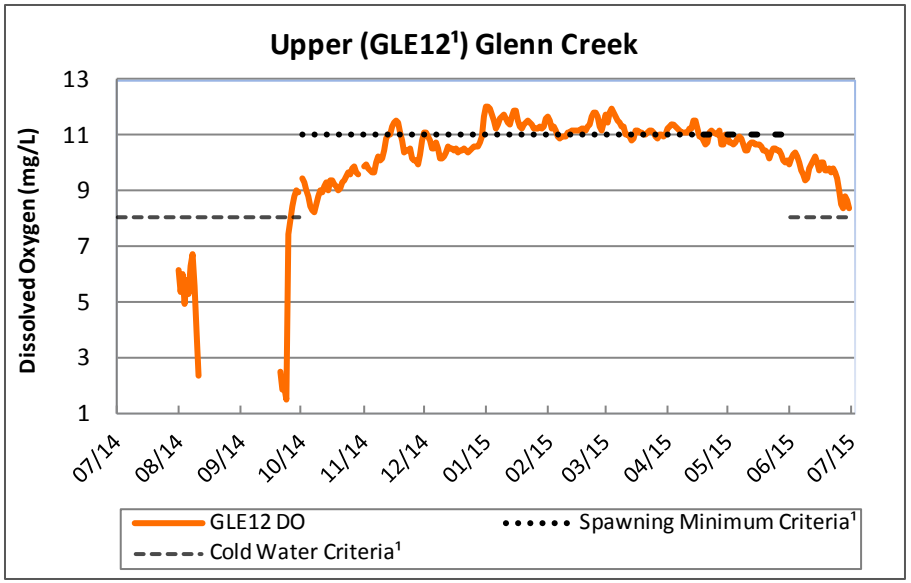
Figure 5

Continuous Instream Dissolved Oxygen Daily Mean (RY 2014/15)









Presented DO data consists of A and B grade data with greater than or equal to 80% of data points collected per day.

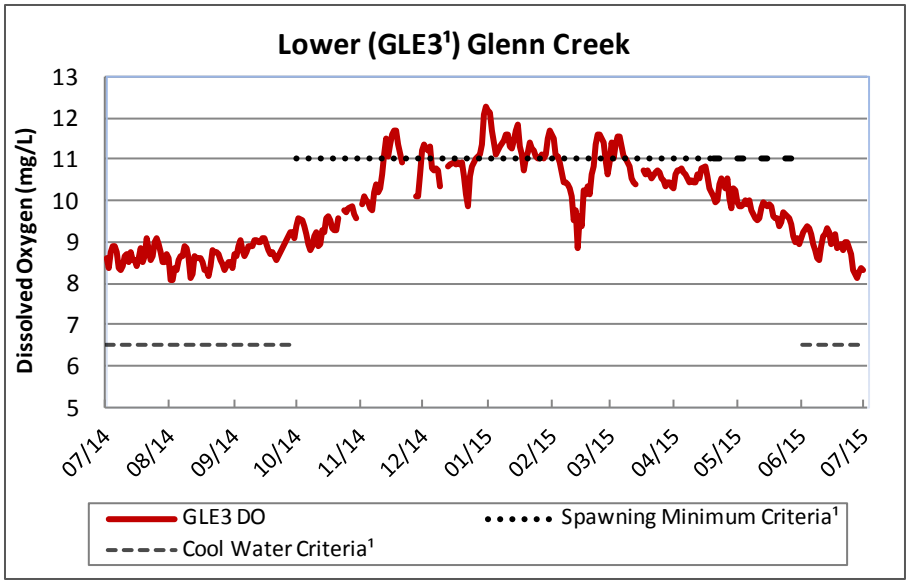
DO Criteria as defined in OAR 340-041-0016 and OAR-340-0340, Tables 340A and 340B.

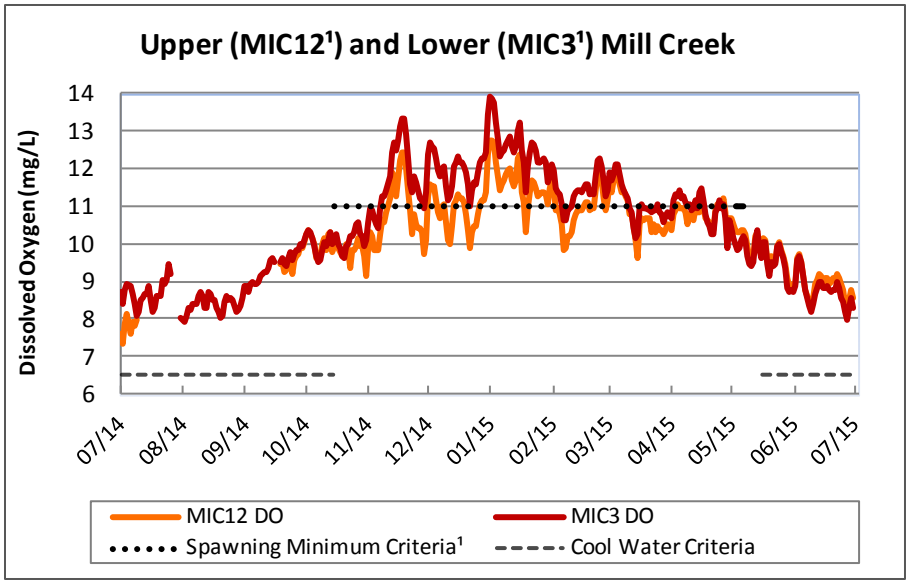
- Spawning Minimum Criteria for applicable streams may not be less than 11 mg/L .
- Cold Water Criteria for applicable streams may not be less than 8 mg/L.

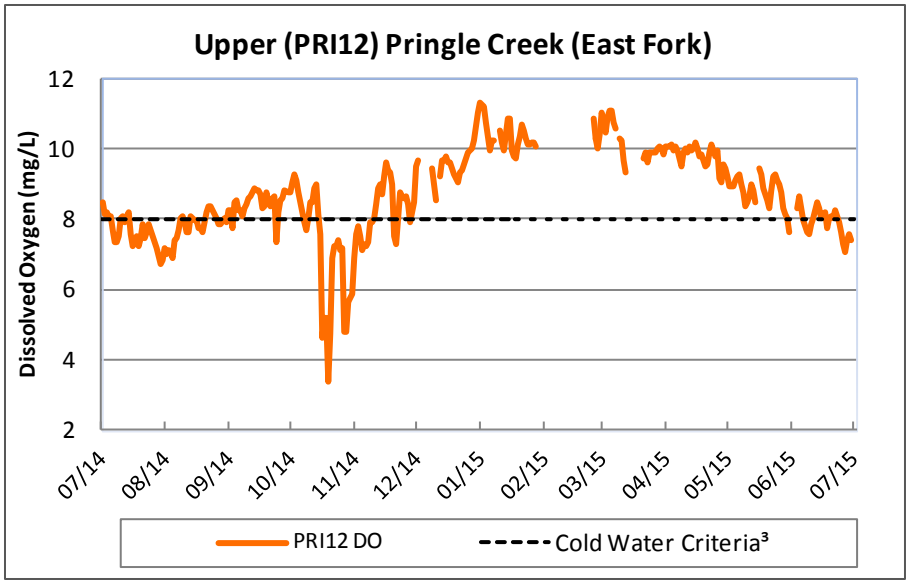
[1] Oregon's 2010 Integrated Report Section 303(d) listed.

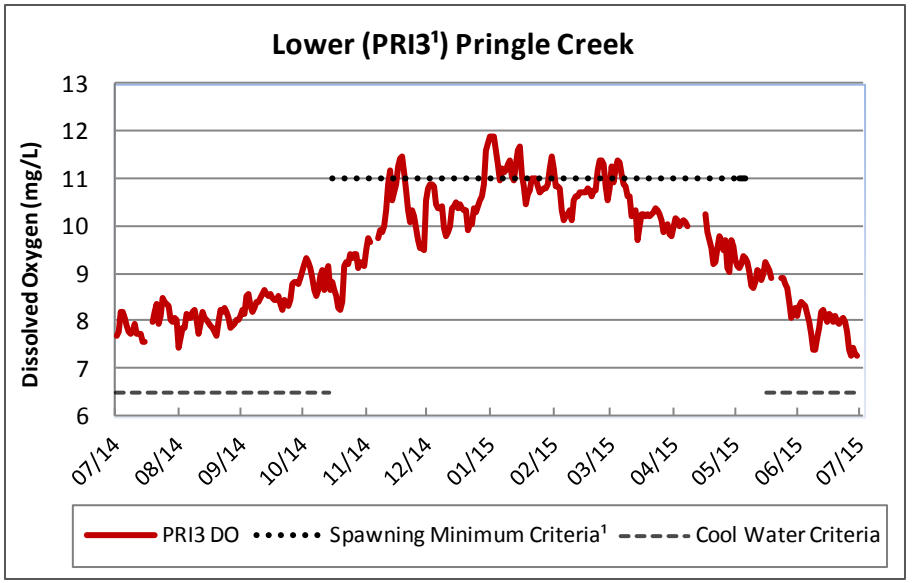
Figure 5

Continuous Instream Dissolved Oxygen Daily Mean (RY 2014/15)









Presented DO data consists of A and B grade data with greater than or equal to 80% of data points collected per day.

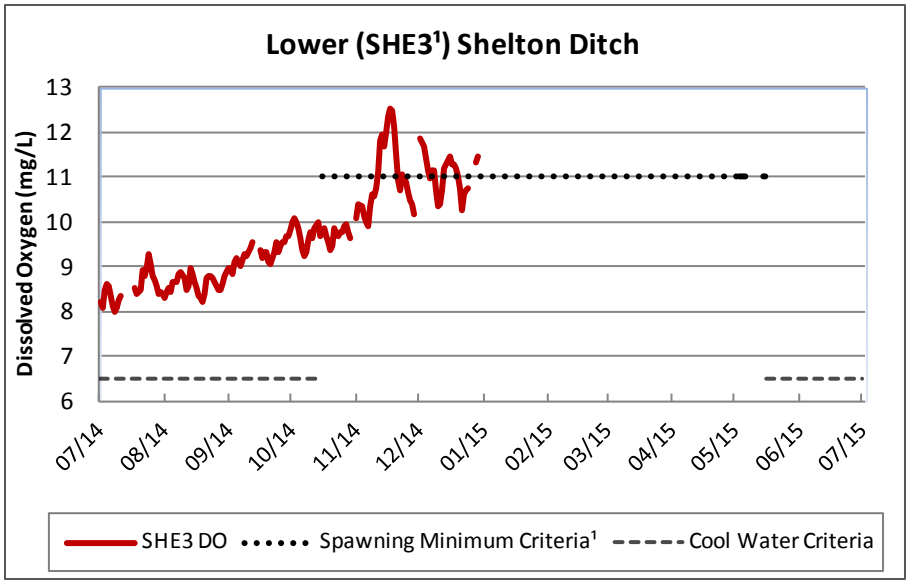
DO Criteria as defined in OAR 340-041-0016 and OAR-340-0340, Tables 340A and 340B.

- Spawning Minimum Criteria for applicable streams may not be less than 11 mg/L .
- Cool Water Criteria for applicable streams may not be less than 6.5 mg/L.

[1] Oregon's 2010 Integrated Report Section 303(d) listed.

Figure 5

Continuous Instream Dissolved Oxygen Daily Mean (RY 2014/15)



Note: Water quality datasonde was removed January 2015 due to upcoming bridge removal and will not be replaced until December 2015.

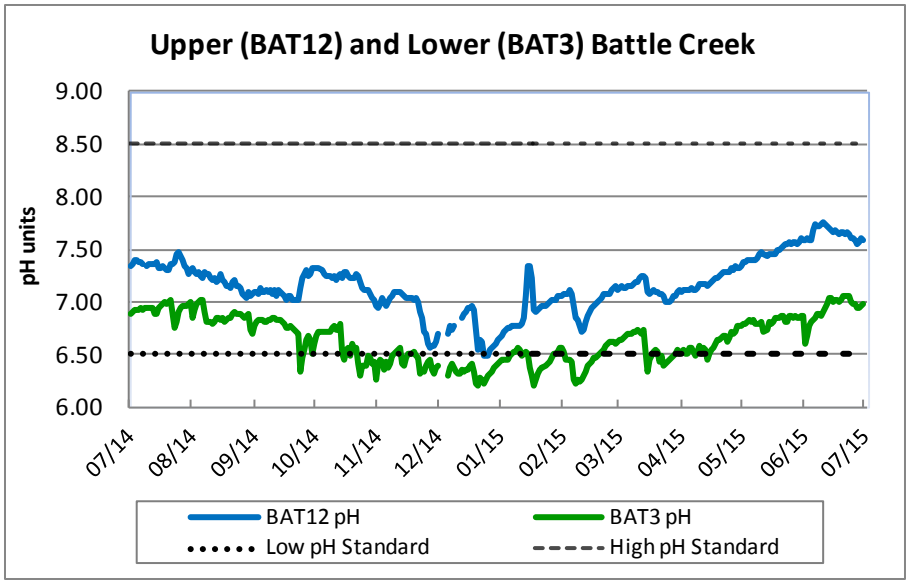
Presented DO data consists of A and B grade data with greater than or equal to 80% of data points collected per day.

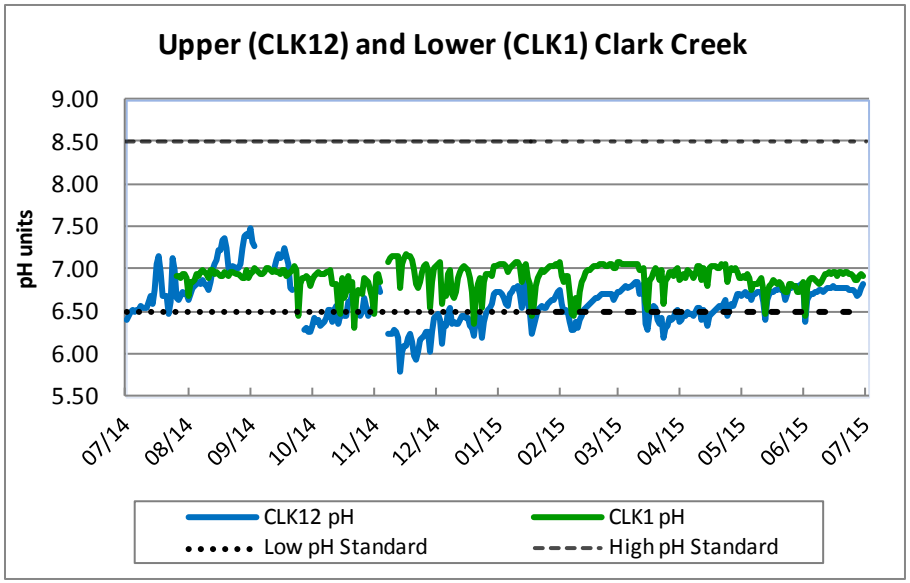
DO Criteria as defined in OAR 340-041-0016 and OAR-340-0340, Tables 340A and 340B.

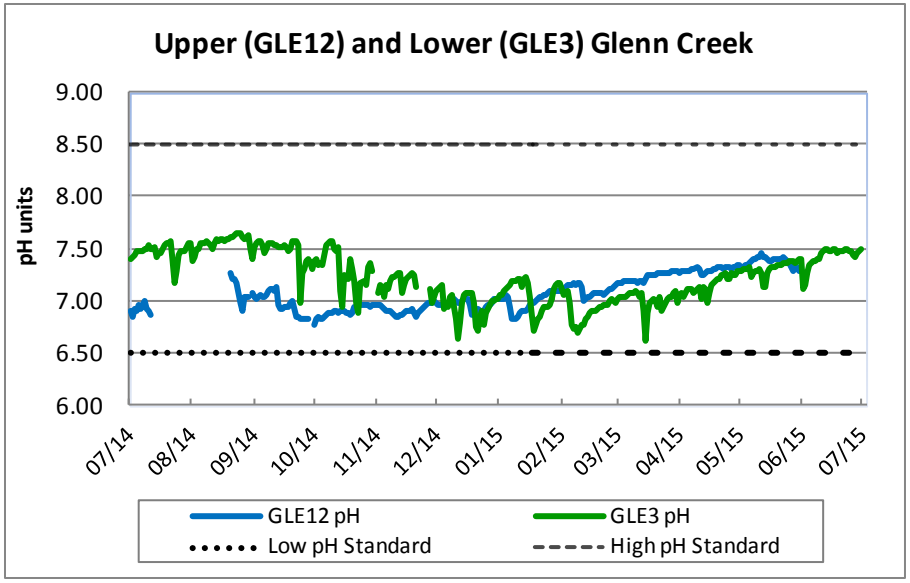
- Spawning Minimum Criteria for applicable streams may not be less than 11 mg/L .
- Cool Water Criteria for applicable streams may not be less than 6.5 mg/L.

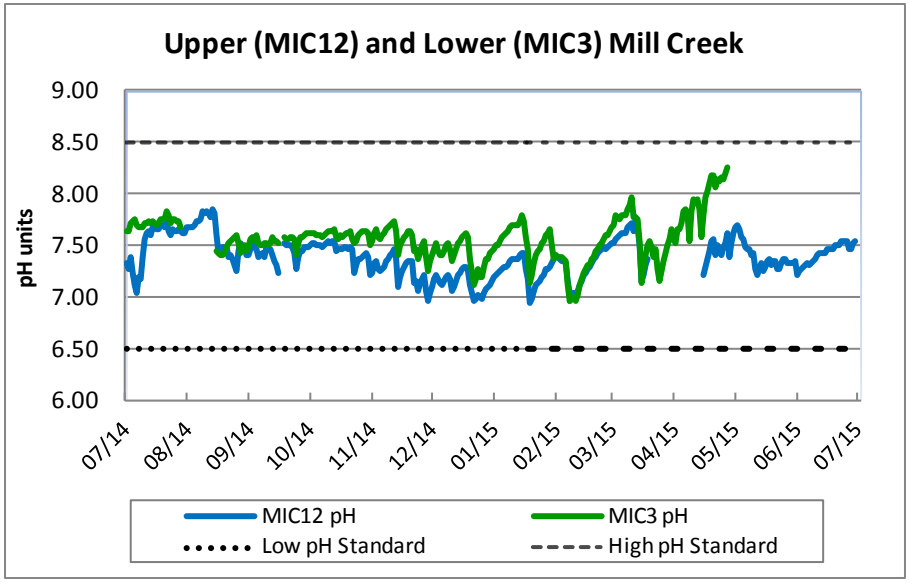
[1] Oregon's 2010Integrated Report Section 303(d) listed.

Figure 6
Continuous Instream pH Daily Mean (RY 2014/15)



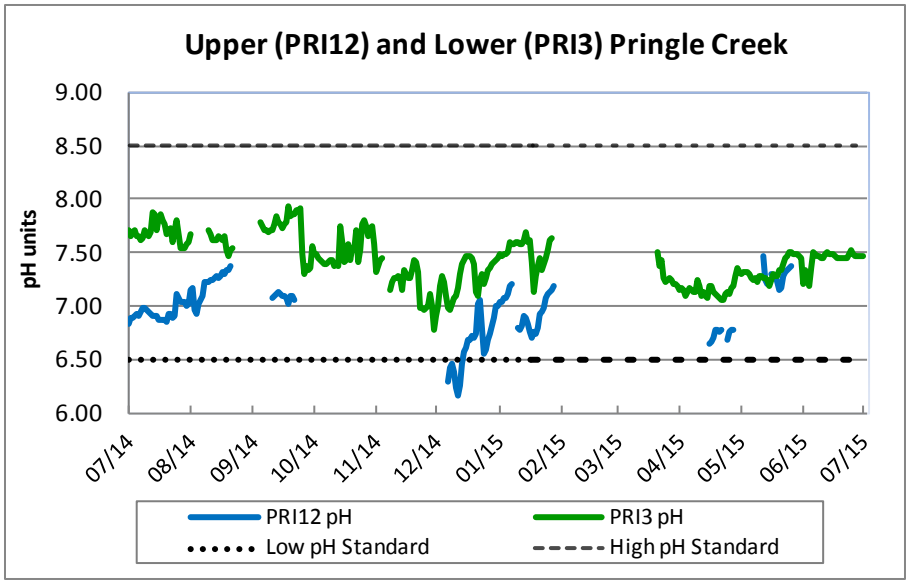


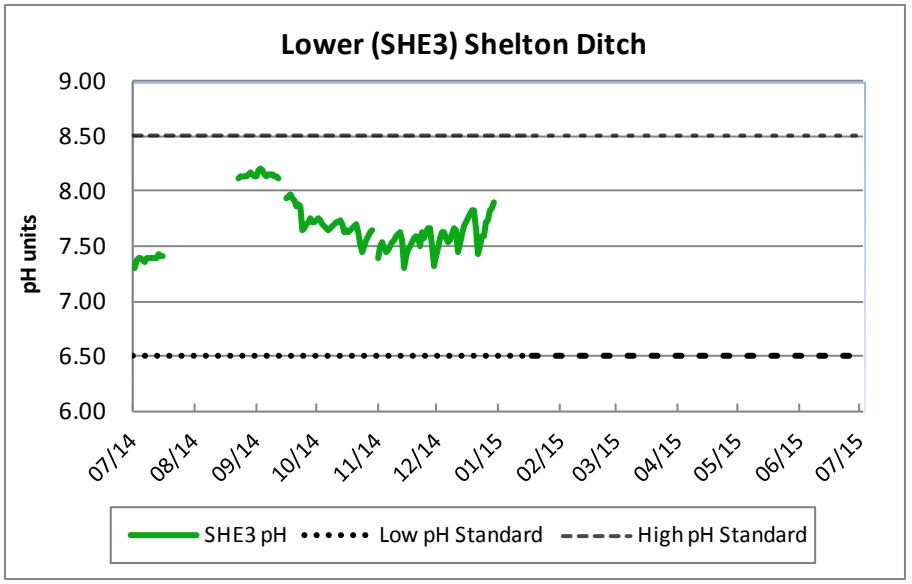




Presented pH data consists of A and B grade data with greater than or equal to 80% of data points collected per day.
As defined in OAR 341-041-0035, Water Quality Standards for the Willamette Basin, pH may not fall outside the ranges of 6.5 to 8.5.

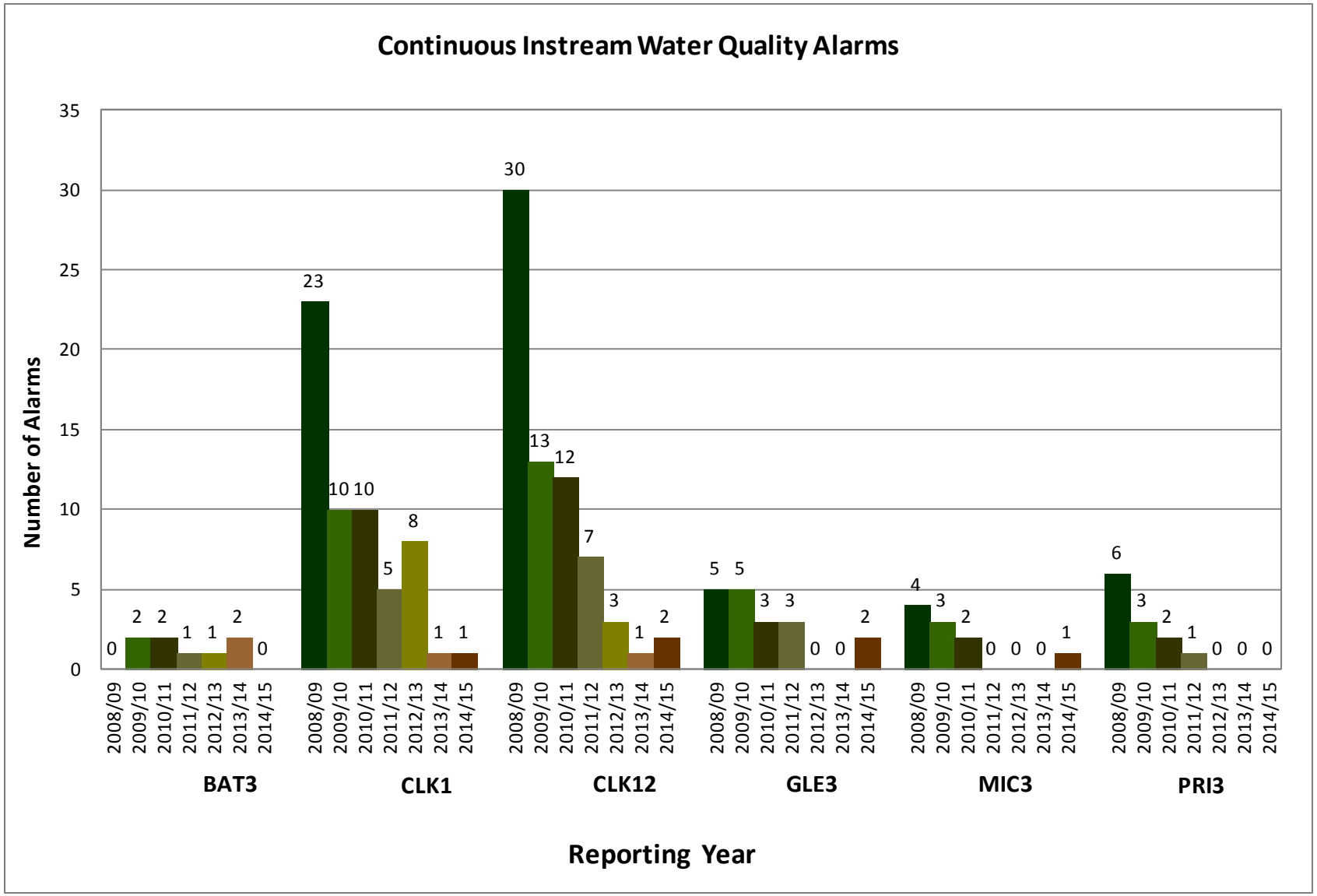
Figure 6
Continuous Instream pH Daily Mean (RY 2014/15)





Note: Shelton Ditch Water quality datasonde was removed January 2015 due to upcoming bridge removal and will not be replaced until December 2015.
Presented pH data consists of A and B grade data with greater than or equal to 80% of data points collected per day.
As defined in OAR 341-041-0035, Water Quality Standards for the Willamette Basin, pH may not fall outside the ranges of 6.5 to 8.5.

Figure 7
Continuous Instream Water Quality Alarms (RY 2008/09 to 2014/15)



Note: The alarm counts have been filtered, based on best professional judgment, to remove alarms resulting from: rain events, non-prohibited activities identified in Schedule A.4.a.xii in the City's NPDES MS4 permit, permitted activities during the in-water work period, and wildlife activity.
The continuous telemetry network was compromised by a radio that was locked in transmitter mode; thus, beginning in April 2014, alarm notification was not received by the City's dispatch center, contributing to a lower number of alarms. This issue was not resolved until August 2014.