

4. Article Two, B.5- Water Quality Monitoring (“WQM”) Plan – Report on whether any of the semi-annual (or annual) WQM required under Article Two, B.5, was conducted during the quarter, and if so, in which sewer basins, and report the results of that monitoring (both BST and fecal coliform) for each such sewer basin.

The second semi-annual round of water quality samples was collected on November 2, 2011. Twenty of the twenty-six sewer basins were sampled. Human source fecal bacteria were identified by Polymerase Chain Reaction (PCR) testing in one or more samples from thirteen sewer basins; however, human sources were confirmed in eleven of these basins using an independent test as discussed below.

As part of continuing re-evaluation of the Water Quality Monitoring Plan and of the methodologies used, the Virginia Tech laboratory that provides the Bacterial Source Tracking (BST) testing services has conducted a library-independent test for human *Bacteroides* gene on 75% (30 of 40 samples) of the PCR tested samples. These results are presented below.

The 2012 annual round of water quality samples is planned for March, and results will be reported in the Second Quarter of 2012.

Basins Subject to Semi-Annual Monitoring and Reporting Requirements:

a. Broad Creek-	BST Results:	Fecal Bacteria Results: (Enterococcus CFU/100mL)
BRC001 – downstream (Henson Creek)	Human – 0% Avian – 38% Canine – 15% Deer – 13% Misc. Wildlife – 23% Non-human Unknown – 11%	83
BRC002 – upstream (Henson Creek)	Human – 0% (0%) Avian – 42% (44%) Canine – 19% (18%) Deer – 12% (13%) Misc. Wildlife – 19% (16%) Non-human Unknown – 8% (9%)	63 (67)

Note: Values in parentheses for station BRC002 are for field duplicate sample.

b. Cabin John-	BST Results:	Fecal Bacteria Results: (Enterococcus CFU/100mL)
CBJ001 – downstream	Human – 0% Avian – 38% Canine – 15% Deer – 4%	68

	Misc. Wildlife – 26% Non-human Unknown – 17%	
	Bacteroides – Negative	
CBJ002 – upstream	Human – 0% Avian – 43% Canine – 12% Deer – 13% Misc. Wildlife – 20% Non-human Unknown – 12%	33
	Bacteroides – Negative	

c. Horsepen-**Fecal Bacteria Results:***(Enterococcus CFU/100mL)***BST Results:**

HSP001 – downstream	Human – 17% Avian – 27% Canine – 11% Deer – 14% Horse – 13% Misc. Wildlife – 13% Non-human Unknown – 5%	185
	Bacteroides – Positive	
HSP002 – upstream	Human – 4% (4%) Avian – 29% (32%) Canine – 12% (13%) Deer – 7% (6%) Horse – 15% (14%) Misc. Wildlife – 19% (20%) Non-human Unknown – 14% (11%)	163 (163)
	Bacteroides – Negative (Negative)	

Note: Values in parentheses for station HSP002 are for field duplicate sample.

d. Indian Creek-**Fecal Bacteria Results:***(Enterococcus CFU/100mL)***BST Results:**

INC001 – downstream	Human – 0% Avian – 31% Canine – 8% Deer – 11% Horse – 18% Misc. Wildlife – 18% Non-human Unknown – 14%	125
INC002 – upstream	Human – 0% Avian – 36% Canine – 13% Deer – 13% Horse – 14%	170

	Misc. Wildlife – 19% Non-human Unknown – 5%	
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e. Little Falls-

Fecal Bacteria Results:

BST Results:

(*Enterococcus* CFU/100mL)

LFS001 – downstream	Human – 0% Avian – 36% Canine – 15% Deer – 14% Misc. Wildlife – 19% Non-human Unknown – 16%	88
LFS002 – upstream	Human – 10% Avian – 32% Canine – 13% Deer – 10% Misc. Wildlife – 22% Non-human Unknown – 13%	340

f. Lower Anacostia-

Fecal Bacteria Results:

BST Results:

(*Enterococcus* CFU/100mL)

ANA001 – downstream	Human – 13% Avian – 39% Canine – 7% Deer – 10% Misc. Wildlife – 17% Non-human Unknown – 14%	290
	Bacteroides – Positive	
ANA002 – upstream	Human – 0% Avian – 43% Canine – 10% Deer – 12% Misc. Wildlife – 22% Non-human Unknown – 13%	65
	Bacteroides – Negative	

g. Lower Beaverdam Creek-

Fecal Bacteria Results:

BST Results:

(*Enterococcus* CFU/100mL)

LBD001 – downstream	Human – 19% Avian – 30% Canine – 13% Deer – 7% Misc. Wildlife – 23% Non-human Unknown – 8%	728
	Bacteroides – Positive	

LBD002 – upstream	Human – 33% Avian – 29% Canine – 12% Deer – 6% Misc. Wildlife – 15% Non-human Unknown – 5%	350
	Bacteroides – Positive	

h. Muddy Branch-**Fecal Bacteria Results:****BST Results:***(Enterococcus CFU/100mL)*

MDB001 – downstream	Human – 0% Avian – 38% Canine – 17% Deer – 9% Misc. Wildlife – 19% Non-human Unknown – 17%	183
	Bacteroides – Negative	
MDB002 – upstream	Human – 0% Avian – 34% Canine – 12% Deer – 13% Misc. Wildlife – 27% Non-human Unknown – 14%	58
	Bacteroides – Negative	

i. Northeast Branch-**Fecal Bacteria Results:****BST Results:***(Enterococcus CFU/100mL)*

NEB001 – upstream	Human – 0% Avian – 41% Canine – 13% Deer – 8% Misc. Wildlife – 21% Non-human Unknown – 17%	75
	Bacteroides – Negative	
NEB002 – downstream	Human – 0% Avian – 37% Canine – 16% Deer – 6% Misc. Wildlife – 19% Non-human Unknown – 22%	110
	Bacteroides – Negative	

j. Northwest Branch-		Fecal Bacteria Results: (<i>Enterococcus</i> CFU/100mL)
BST Results:		
NWA001 – downstream	Human – 0% Avian – 39% Canine – 9% Deer – 13% Misc. Wildlife – 21% Non-human Unknown – 18%	40
	Bacteroides – Negative	
NWA002 – upstream	Human – 6% Avian – 39% Canine – 14% Deer – 12% Misc. Wildlife – 17% Non-human Unknown – 12%	273
	Bacteroides – Positive	

k. Oxon Run-		Fecal Bacteria Results: (<i>Enterococcus</i> CFU/100mL)
BST Results:		
OXN001 – downstream	Human – 5% Avian – 36% Canine – 16% Deer – 8% Misc. Wildlife – 24% Non-human Unknown – 11%	165
	Bacteroides – Negative	
OXN002 – upstream (Watts Branch)	Human – 21% Avian – 41% Canine – 11% Deer – 7% Misc. Wildlife – 10% Non-human Unknown – 10%	445
	Bacteroides – Positive	

l. Paint Branch-		Fecal Bacteria Results: (<i>Enterococcus</i> CFU/100mL)
BST Results:		
PNT001 – downstream	Human – 0% Avian – 37% Canine – 15% Deer – 12% Misc. Wildlife – 21% Non-human Unknown – 15%	83
	Bacteroides – Negative	

PNT002 – upstream	Human – 0% Avian – 32% Canine – 17% Deer – 11% Misc. Wildlife – 23% Non-human Unknown – 17%	58
	Bacteroides – Negative	

m. Parkway-

Fecal Bacteria Results:

BST Results:

(*Enterococcus* CFU/100mL)

PKY001 – downstream (Bear Branch)	Human – 4% Avian – 21% Canine – 17% Deer – 11% Misc. Wildlife – 31% Non-human Unknown – 16%	212
	Bacteroides – Negative	
PKY002 – upstream (Walker Branch)	Human – 3% Avian – 34% Canine – 14% Deer – 8% Misc. Wildlife – 21% Non-human Unknown – 20%	223
	Bacteroides – Negative	

n. Piscataway-

Fecal Bacteria Results:

BST Results:

(*Enterococcus* CFU/100mL)

PSW001 – downstream	Human – 7% Avian – 37% Canine – 10% Deer – 14% Misc. Wildlife – 19% Non-human Unknown – 13%	180
	Bacteroides – Negative	
PSW002 – upstream	Human – 0% Avian – 38% Canine – 15% Deer – 10% Misc. Wildlife – 22% Non-human Unknown – 15%	38
	Bacteroides – Negative	

o. Rock Creek-		Fecal Bacteria Results: (<i>Enterococcus</i> CFU/100mL)
BST Results:		
RKC001 – downstream	Human – 11% (10%) Avian – 37% (35%) Canine – 12% (11%) Deer – 6% (9%) Misc. Wildlife – 26% (27%) Non-human Unknown – 8% (8%)	460 (463)
RKC002 – upstream	Human – 13% Avian – 33% Canine – 15% Deer – 9% Misc. Wildlife – 20% Non-human Unknown – 10%	177

Note: Values in parentheses for station RKC001 are for field duplicate sample.

p. Seneca Creek-		Fecal Bacteria Results: (<i>Enterococcus</i> CFU/100mL)
BST Results:		
SNC001 – downstream	Human – 17% Avian – 34% Canine – 9% Deer – 7% Misc. Wildlife – 19% Non-human Unknown – 14%	135
	Bacteroides – Positive	
SNC002 – upstream	Human – 12% (13%) Avian – 38% (37%) Canine – 13% (15%) Deer – 5% (8%) Misc. Wildlife – 22% (23%) Non-human Unknown – 10% (4%)	155 (153)
	Bacteroides – Positive (Positive)	

Note: Values in parentheses for station SNC002 are for field duplicate sample.

q. Sligo Creek-		Fecal Bacteria Results: (<i>Enterococcus</i> CFU/100mL)
BST Results:		
SLC001 – downstream	Human – 0% Avian – 41% Canine – 13% Deer – 3% Misc. Wildlife – 27% Non-human Unknown – 16%	70
	Bacteroides – Negative	

SLC002 – upstream	Human – 0% Avian – 37% Canine – 14% Deer – 4% Misc. Wildlife – 33% Non-human Unknown – 12%	125
	Bacteroides – Negative	

r. Upper Beaverdam Creek- Fecal Bacteria Results:
BST Results: (*Enterococcus* CFU/100mL)

UBD001 – downstream	Human – 11% Avian – 37% Canine – 8% Deer – 9% Misc. Wildlife – 21% Non-human Unknown – 14%	100
	Bacteroides – Positive	
UBD002 – upstream	Human – 27% (28%) Avian – 24% (21%) Canine – 10% (9%) Deer – 12% (13%) Misc. Wildlife – 15% (16%) Non-human Unknown – 12% (13%)	540 (610)
	Bacteroides – Positive (Positive)	

Note: Values in parentheses for station UBD002 are for field duplicate sample.

s. Watts Branch- Fecal Bacteria Results:
BST Results: (*Enterococcus* CFU/100mL)

WTB001 – downstream	Human – 8% Avian – 29% Canine – 18% Deer – 14% Misc. Wildlife – 17% Non-human Unknown – 14%	195
WTB002 – upstream	Human – 14% Avian – 27% Canine – 17% Deer – 15% Misc. Wildlife – 19% Non-human Unknown – 8%	345

t. Western Branch-	BST Results:	Fecal Bacteria Results: (<i>Enterococcus</i> CFU/100mL)
WNB001 – downstream	Human – 37% Avian – 26% Canine – 11% Deer – 8% Misc. Wildlife – 12% Non-human Unknown – 6%	1,048
	Bacteroides – Positive	
WNB002 – upstream	Human – 19% Avian – 33% Canine – 18% Deer – 6% Misc. Wildlife – 15% Non-human Unknown – 9%	210
	Bacteroides – Positive	

Basins Subject to an Annual Monitoring and Reporting Requirements-

- | | BST Results: | Fecal Bacteria Results:
(<i>Enterococcus</i> CFU/100mL) |
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| a. Dulles Interceptor- | | |
| b. Mattawoman- | | |
| c. Monacacy- | | |
| d. Patuxent Center- | | |
| e. Patuxent North- | | |
| f. Rock Run- | | |