APPENDIX B – PLUM POINT CREEK
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PLUM POINT CREEK, CALVERT COUNTY, MD

Drainage Area (sq. mi.):	3.96	Rosgen Stream Type:	E6
Stream Order:	1	Survey Date:	April 2004
Percent Imperviousness:	1.30		

Land Use (%): Urban: 6.10 Agricultural: 19.90 Forest: 74.00

General Study Reach Description: The study reach starts approximately 500 feet upstream of Plum Point Road and is located on private property. Plum Point Creek is a clay bed stream that flows directly into the Chesapeake Bay. The stream has pool/run features and is vertically and laterally stable. Both the pool and run features contain woody debris. There are few depositional features in the channel. The floodplain consists of forested wetlands, which results in the reach having undulating banks at several locations where drainage from the wetlands enters the channel. The floodplain is densely forested with red maple and tulip poplar. The understory is sparse with spice bush and paw paw. Map and GPS coordinates are not provided for sites located on private property.

Photo 1. Looking upstream from top of study reach.

Photo 2. Looking downstream from Cross Section 1 at meander.

Photo 3. Looking upstream from Cross Section 3.

Photo 4. Looking downstream at bottom of study reach.

Photo 5. Upstream view of monumented Cross Section 1.

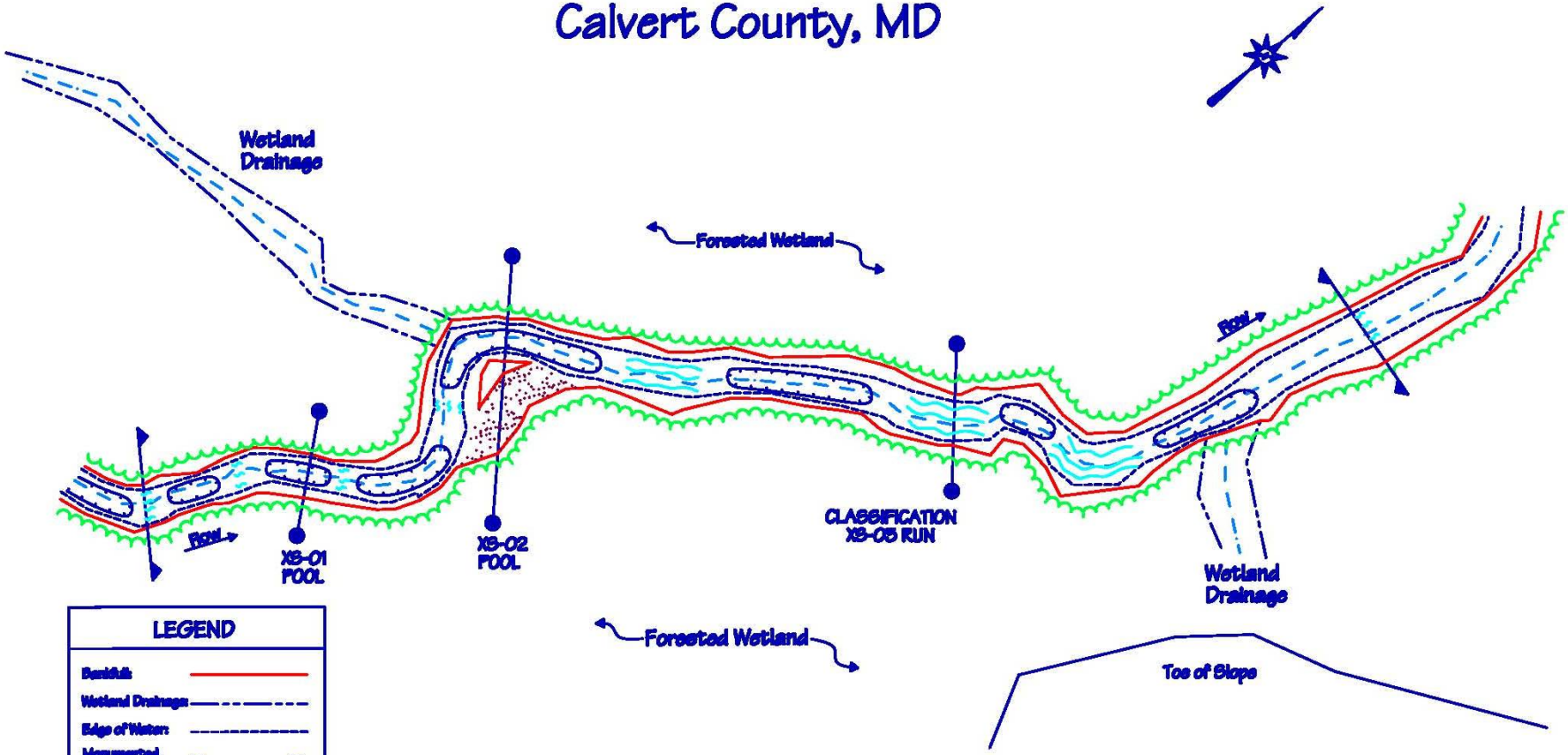
Photo 6. Upstream view of monumented Cross Section 2.

Photo 7. Downstream view of monumented classification Cross Section 3.

Cross Section Summary Table

	Monumented		
	XS-01 Pool	**XS-02 Pool**	**XS-03 Classification Riffle**
Bankfull Width (ft)	12.58	11.06	14.46
Bankfull Cross-sectional Area (ft^2)	15.28	13.17	15.39
Hydraulic Radius (ft)	0.99	0.98	0.96
Mean Bankfull Depth (ft)	1.21	1.19	1.06
Maximum Bankfull Depth (ft)	1.94	1.88	1.65
Wetted Perimeter (ft)	15.39	13.43	15.98
Width/Depth Ratio	10.40	9.29	13.59
Entrenchment Ratio	N/A	N/A	34.48

PLUM POINT CREEK
Calvert County, MD

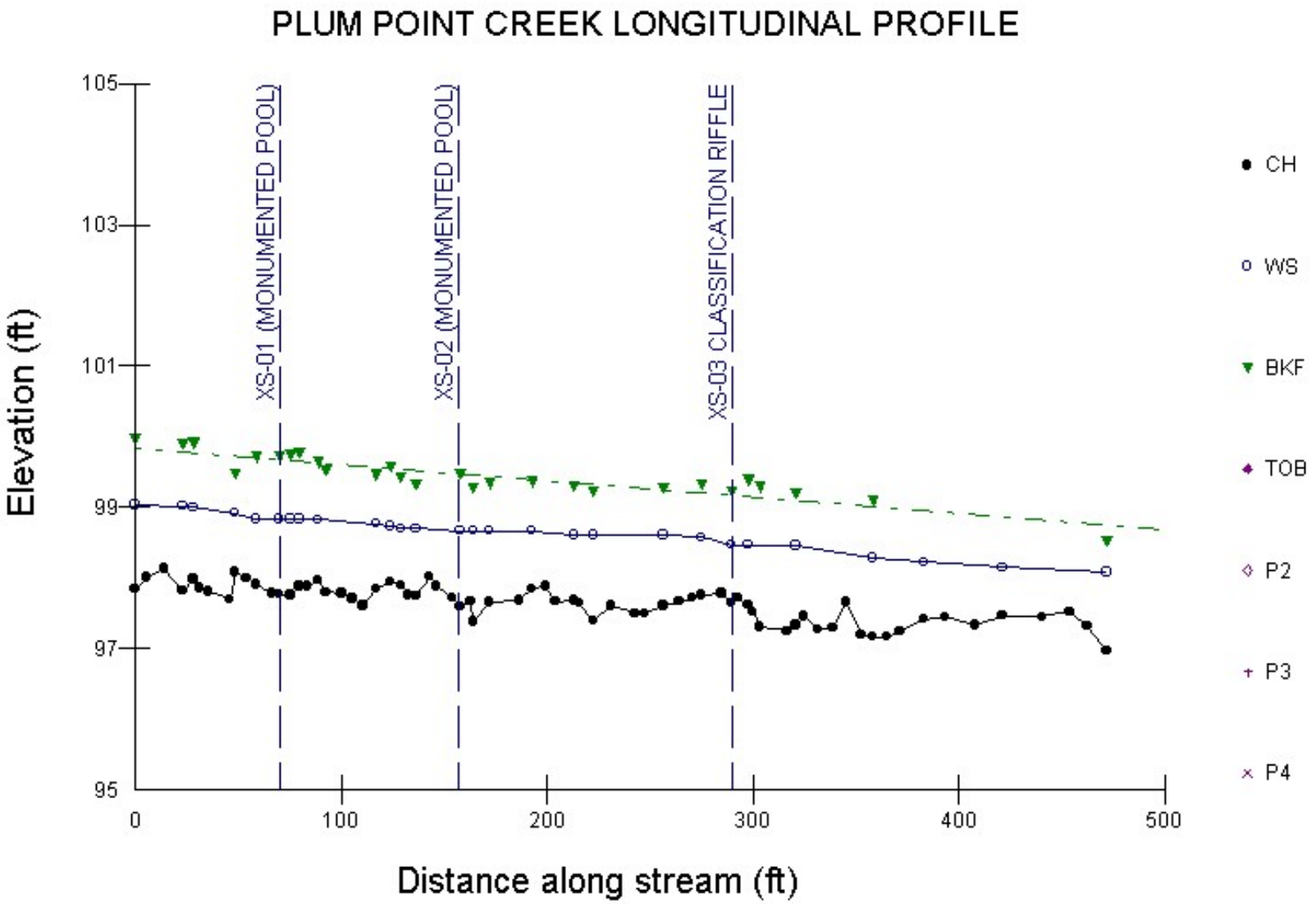


LEGEND

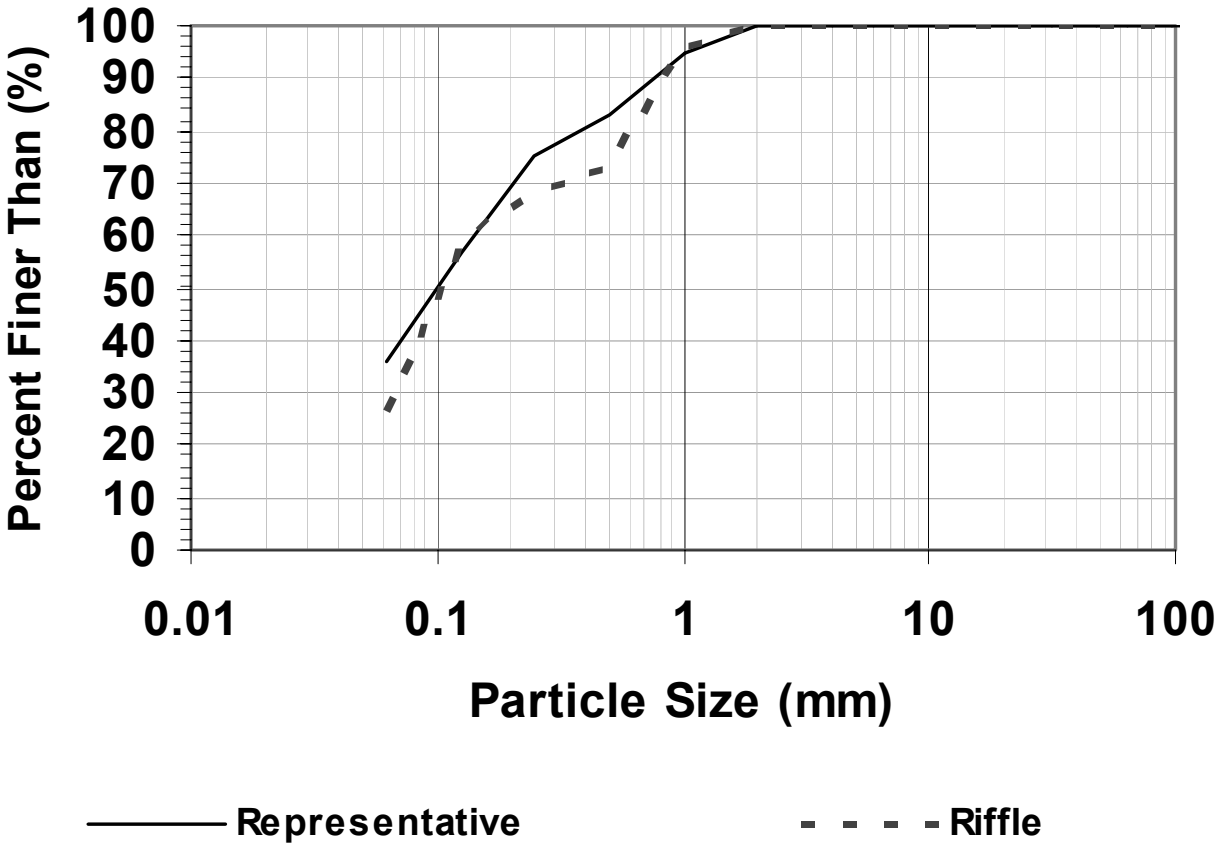
- Bankfull
- Wetland Drainage
- Edge of Water
- Monumented Cross-section
- Thalweg
- Riffle
- Run
- Pool
- Treeline
- Bar
- Large Woody Debris
- Study Reach End Points

Survey Dates: 03/10/04 & 03/12/04
Study Reach Length: 472'

Scale (ft): 0 25 50 100


PLUM POINT CREEK LONGITUDINAL PROFILE
Elevation (ft)
105
103
101
99
97
95
0
100
200
300
400
500
Distance along stream (ft)
XS-01 (MONUMENTED POOL)
XS-02 (MONUMENTED POOL)
XS-03 CLASSIFICATION RIFFLE
CH
WS
BKF
TOB
P2
P3
P4

Plum Point Creek Particle Size Distribution



Reference Reach Data Summary

No.	Variable	Symbol	Units		Plum Point Creek
1	Stream type				E6
2	Drainage area		mi^2		3.96
3	Riffle Bankfull width	W_{bkf}	feet	Mean	14.09
				Min	12.02
				Max	16.48
4	Riffle Bankfull mean depth	d_{bkf}	feet	Mean	1.15
				Min	0.94
				Max	1.38
5	Width depth ratio	W/d		Mean	12.60
				Min	8.71
				Max	17.53
6	Riffle Bankfull cross sectional area	A_{bkf}	ft_2	Mean	15.60
				Min	14.69
				Max	16.63
7	Pool Bankfull cross sectional area	A_{pool}	ft_2	Mean	14.94
				Min	13.17
				Max	17.30
8	Riffle Bankfull maximum depth	d_{max}	feet	Mean	1.77
				Min	1.57
				Max	2.12
9	Max Riffle depth/ Mean riffle depth	d_{riff}/d_{bkf}		Mean	1.60
				Min	1.43
				Max	1.93
10	Low bank height to max d_{bkf} ratio	LBH/d_{riff}		Mean	1.00
				Min	N/A
				Max	N/A
11	Width of flood prone area	W_{fpa}	feet	Mean	500
				Min	N/A
				Max	N/A
12	Entrenchment Ratio	W_{fpa}/W_{bkf}		Mean	34.48
				Min	N/A
				Max	N/A
13	Meander Length	L_m	feet	Mean	75.64
				Min	67.12
				Max	84.15
14	Ratio of meander length to bankfull width	L_m/W_{bkf}		Mean	5.22
				Min	4.63
				Max	5.80
15	Radius of curvature	R_c	feet	Mean	19.91
				Min	17.17
				Max	25.73
16	Ratio: Radius of curvature to bankfull width	R_c/W_{bkf}		Mean	1.37
				Min	1.18
				Max	1.77
17	Belt Width	W_{blt}	feet	Mean	46.84
				Min	39.31
				Max	54.37
18	Meander width ratio	W_{blt}/W_{bkf}		Mean	3.23
				Min	2.71
				Max	3.75

Reference Reach Data Summary

No.	Variable	Symbol	Units		Plum Point Creek
19	Sinuosity	K			1.35
20	Valley Slope	S_{val}	ft/ft		0.0025
21	Average Water Surface Slope	S_{avg}	ft/ft		0.0022
22	Pool Water Surface Slope	S_{pool}	ft/ft	Mean	0.0008
				Min	0.0002
				Max	0.0017
23	Pool WS slope / Average WS slope	S_{pool}/S_{avg}		Mean	0.37
				Min	0.10
				Max	0.79
24	Riffle Water Surface slope	Sriff	ft/ft	Mean	0.0045
				Min	0.0025
				Max	0.0066
25	Riffle WS slope / Average WS slope	S_{rifF}/S_{avg}		Mean	2.06
				Min	1.15
				Max	3.00
26	Run WS Slope	S_{run}/S_{avg}	ft/ft	Mean	0.0011
				Min	0.0001
				Max	0.0041
27	Run WS slope / Average WS slope	S_{run}/S_{avg}	ft/ft	Mean	0.48
				Min	0.05
				Max	1.86
28	Glide WS Slope	S_{glide}		Mean	0.0017
				Min	0.0001
				Max	0.0040
29	Glide WS slope / Average WS slope	S_{glide}/S_{avg}	ft/ft	Mean	0.76
				Min	0.05
				Max	1.82
30	Maximum pool depth	d_{pool}	feet	Mean	1.94
				Min	1.84
				Max	2.08
31	Ratio of max pool depth to average bankfull depth	d_{pool}/d_{bkf}		Mean	1.76
				Min	1.67
				Max	1.89
32	Max Run Depth	d_{run}	feet	Mean	1.69
				Min	1.58
				Max	1.82
33	Ratio of max run depth to average bankfull depth	d_{run}/d_{bkf}		Mean	1.54
				Min	1.44
				Max	1.65
34	Max Glide Depth	d_{glide}	feet	Mean	1.69
				Min	1.52
				Max	1.85
35	Ratio of max glide depth to average bankfull depth	d_{glide}/d_{bkf}	feet	Mean	1.53
				Min	1.38
				Max	1.68

Reference Reach Data Summary

No.	Variable	Symbol	Units		Plum Point Creek
36	Pool length	L_{pool}	feet	Mean	41.15
				Min	20.48
				Max	63.60
37	Ratio of pool length to bankfull width	L_{pool}/W_{bkf}	feet	Mean	2.84
				Min	1.41
				Max	4.39
38	Pool width	W_{pool}	feet	Mean	13.19
				Min	11.06
				Max	14.60
39	Ratio of pool width to bankfull width	W_{pool}/W_{bkf}		Mean	0.91
				Min	0.76
				Max	1.01
40	Ratio of pool area to bankfull area	A_{pool}/A_{bkf}		Mean	0.97
				Min	0.86
				Max	1.12
41	Point bar slope	S_{pb}	ft/ft	Mean	N/A
				Min	N/A
				Max	N/A
42	Pool to pool spacing	p-p	feet	Mean	71.70
				Min	51.19
				Max	81.80
43	Ratio of pool to pool spacing to bankfull width	$p\text{-}p/W_{bkf}$		Mean	4.94
				Min	3.53
				Max	5.64
Materials					
44	Particle Size Distribution - Channel	D_{16}	mm		0.03
		D_{35}	mm		0.06
		D_{50}	mm		0.10
		D_{84}	mm		0.54
		D_{95}	mm		1.00
45	Particle Size Distribution - Riffle	D_{16}	mm		0.04
		D_{35}	mm		0.08
		D_{50}	mm		0.11
		D_{84}	mm		0.74
		D_{95}	mm		0.98
46	Particle Size Distribution - Bar	D_{16}	mm		N/A
		D_{35}	mm		N/A
		D_{50}	mm		N/A
		D_{84}	mm		N/A
		D_{95}	mm		N/A
47	Largest Particle Size		mm		N/A

USFWS-SHARP COARSE WOODY DEBRIS	
Stream: Plum Point Creek	Page 1 of 1
Reach: Reference Reach	Date: 7/29/2004
adapted from E.G. Robinson and R.L. Beschta. 1990	Crew: MAS & KR

Survey total = Number of LWD pieces greater than 0.65 ft (20 cm) in diameter (small end) and 4.9 ft (1.5 m) in length

Reach Length (ft) = 472				BF Width (ft) = 15				
Large end diam (ft)	Avg. diam (ft)	Length (ft)	Influence Zones	Horiz. Orient.	Rootwad instream/out	Debris Grouped / Ungrouped	Provides Grade Control	Notes (CWD location - pool, run, riffle, glide) (CWD responsible for pool formation: dominant, secondary, negligible)
0.80	0.72	65.0	3 4	70	Out	G	N	Run-spans ch
1.10	0.70	35.0	2 3 4	100	Out	G	N	Pool-spans ch
0.75	0.90	70.0	3 4	100	Out	G	N	Pool-spans ch

Influence Zone and Horizontal Orientation - see back of sheet

Rootwad in/out refers to the rootwad being located in or out of the stream

Debris Grouped/Ungrouped: grouped debris is debris that is part of collection of debris, ungrouped debris is a single piece by itself