

**ATLANTIC COAST PIPELINE, LLC  
ATLANTIC COAST PIPELINE**

**VCP Consistency Certification**

**APPENDIX 5**

**Wetlands Crossed and Crossing Methods for  
the Atlantic Coast Pipeline Coastal Zone**

APPENDIX 5

**Atlantic Coast Pipeline Project - Commonwealth of Virginia  
Wetland Crossed and Crossing Methods for the Atlantic Coast Pipeline Coastal Zone**

| Mile Post | Hydrologic Unit Code (HUC8) | Feature ID <sup>a</sup> | Cowardin Class <sup>b</sup> | Facilities Crossed          | Approximate Crossing Length (feet) <sup>c,d</sup> | Temporary Construction Impacts (acres) <sup>e</sup> | Operation Impacts (acres) <sup>f</sup> | Permanent Impacts (acres) <sup>g</sup> | Construction Method | Latitude | Longitude |
|-----------|-----------------------------|-------------------------|-----------------------------|-----------------------------|---|---|--|--|---------------------|----------|-----------|
| 38.6      | 03010202                    | wsua006f                | PFO                         | Perm ROW                    | 209   | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.63074 | -76.89056 |
| 39.1      | 03010202                    | wsua007s                | PSS                         | Perm AR                     | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.08                                   | NA                  | 36.62944 | -76.88160 |
| 39.1      | 03010202                    | wsuc010s                | PSS                         | Perm AR                     | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.01                                   | NA                  | 36.63350 | -76.88303 |
| 39.1      | 03010202                    | wsua007s                | PSS                         | Perm AR, Perm ROW, Temp ROW | 50  | 0.12  | 0.01                                   | 0.07                                   | Open Cut            | 36.63287 | -76.88246 |
| 39.4      | 03010202                    | wsua008f                | PFO                         | Perm ROW, Temp ROW          | 44  | 0.16  | 0.03                                   | 0.00                                   | Open Cut            | 36.63396 | -76.87851 |
| 39.4      | 03010202                    | wsua008f                | PFO                         | Perm ROW, Temp ROW          | 96  | 0.16  | 0.07                                   | 0.00                                   | Open Cut            | 36.63422 | -76.87823 |
| 39.5      | 03010202                    | wsua021f                | PFO                         | Perm ROW, Temp ROW          | 39  | 0.07  | 0.03                                   | 0.00                                   | Open Cut            | 36.63440 | -76.87619 |
| 39.5      | 03010202                    | wsua021f                | PFO                         | Perm ROW, Temp ROW          | 234   | 0.40  | 0.16                                   | 0.00                                   | Open Cut            | 36.63451 | -76.87577 |
| 39.6      | 03010202                    | wsua021f                | PFO                         | Perm ROW, Temp ROW          | 213   | 0.32  | 0.15                                   | 0.00                                   | Open Cut            | 36.63453 | -76.87481 |
| 39.7      | 03010202                    | wsua020f                | PFO                         | Perm ROW, Temp ROW          | 25  | 0.04  | 0.02                                   | 0.00                                   | Open Cut            | 36.63430 | -76.87274 |
| 39.7      | 03010202                    | wsua020f                | PFO                         | Perm ROW, Temp ROW          | 12  | 0.02  | 0.01                                   | 0.00                                   | Open Cut            | 36.63441 | -76.87264 |
| 39.7      | 03010202                    | wsua019s                | PSS                         | Perm ROW, Temp ROW          | 111   | 0.21  | 0.03                                   | 0.00                                   | Open Cut            | 36.63395 | -76.87196 |
| 39.9      | 03010202                    | wsua018s                | PSS                         | Perm ROW                    | 33  | 0.03  | 0.01                                   | 0.00                                   | Open Cut            | 36.63388 | -76.86949 |
| 40.0      | 03010202                    | wsua009f                | PFO                         | Perm ROW, Temp ROW          | 32  | 0.06  | 0.02                                   | 0.00                                   | Open Cut            | 36.63350 | -76.86764 |
| 40.1      | 03010202                    | wsua010f                | PFO                         | Perm ROW, Temp ROW          | 62  | 0.11  | 0.05                                   | 0.00                                   | Open Cut            | 36.63342 | -76.86554 |
| 40.1      | 03010202                    | wsua010f                | PFO                         | Perm ROW, Temp ROW          | 31  | 0.05  | 0.02                                   | 0.00                                   | Open Cut            | 36.63312 | -76.86534 |
| 40.2      | 03010202                    | wsua010f                | PFO                         | Perm ROW, Temp ROW          | 62  | 0.09  | 0.04                                   | 0.00                                   | Open Cut            | 36.63374 | -76.86444 |
| 40.2      | 03010202                    | wsua010f                | PFO                         | Perm ROW, Temp ROW          | 38  | 0.10  | 0.03                                   | 0.00                                   | Open Cut            | 36.63398 | -76.86447 |
| 41.0      | 03010202                    | wsua072f                | PFO                         | Perm ROW, Temp ROW          | 68  | 0.11  | 0.05                                   | 0.00                                   | Open Cut            | 36.64334 | -76.85867 |
| 41.1      | 03010202                    | wsua070f                | PFO                         | Perm ROW, Temp ROW          | 83  | 0.15  | 0.06                                   | 0.00                                   | Open Cut            | 36.64518 | -76.85902 |
| 41.2      | 03010202                    | wsua071f                | PFO                         | Perm ROW, Temp ROW          | 490   | 0.80  | 0.34                                   | 0.00                                   | Open Cut            | 36.64669 | -76.85924 |
| 41.4      | 03010202                    | wsuo037f                | PFO                         | Perm ROW, Temp ROW          | 32  | 0.05  | 0.02                                   | 0.00                                   | Open Cut            | 36.64960 | -76.85971 |
| 41.4      | 03010202                    | wsuo037f                | PFO                         | Perm ROW, Temp ROW          | 72  | 0.15  | 0.05                                   | 0.00                                   | Open Cut            | 36.64966 | -76.85935 |
| 42.2      | 03010202                    | wsuo013f                | PFO                         | Perm ROW, Temp ROW          | 89  | 0.11  | 0.06                                   | 0.00                                   | Open Cut            | 36.65895 | -76.85198 |
| 42.3      | 03010202                    | wsuo013f                | PFO                         | Perm ROW, Temp ROW          | 172   | 0.33  | 0.12                                   | 0.00                                   | Open Cut            | 36.65935 | -76.85182 |
| 42.3      | 03010202                    | wsuo013f                | PFO                         | Perm ROW, Temp ROW          | 156   | 0.26  | 0.11                                   | 0.00                                   | Open Cut            | 36.65983 | -76.85190 |
| 42.7      | 03010202                    | wsuo012f                | PFO                         | Perm ROW, Temp ROW          | 107   | 0.18  | 0.07                                   | 0.00                                   | Open Cut            | 36.66465 | -76.85134 |
| 43.1      | 03010202                    | wsup030e                | PEM                         | Perm ROW, Temp ROW          | 11  | 0.04  | 0.00                                   | 0.00                                   | Open Cut            | 36.66732 | -76.84521 |
| 43.7      | 03010202                    | wsup014e                | PEM                         | Perm ROW                    | 26  | 0.02  | 0.00                                   | 0.00                                   | Open Cut            | 36.66765 | -76.83474 |
| 43.7      | 03010202                    | wsup014f                | PFO                         | Perm ROW, Temp ROW          | Not Crossed<br>By Centerline                      | 0.02  | 0.00                                   | 0.00                                   | Open Cut            | 36.66812 | -76.83434 |

APPENDIX 5 (cont'd)

**Atlantic Coast Pipeline Project - Commonwealth of Virginia  
Wetland Crossed and Crossing Methods for the Atlantic Coast Pipeline Coastal Zone**

| Mile Post | Hydrologic Unit Code (HUC8) | Feature ID <sup>a</sup> | Cowardin Class <sup>b</sup> | Facilities Crossed  | Approximate Crossing Length (feet) <sup>c,d</sup> | Temporary Construction Impacts (acres) <sup>e</sup> | Operation Impacts (acres) <sup>f</sup> | Permanent Impacts (acres) <sup>g</sup> | Construction Method | Latitude | Longitude |
|-----------|-----------------------------|-------------------------|-----------------------------|---------------------|---|---|--|--|---------------------|----------|-----------|
| 43.8      | 03010202                    | wsup013e                | PEM                         | Perm ROW, Temp ROW  | 490   | 0.76  | 0.00                                   | 0.00                                   | Open Cut            | 36.66810 | -76.82977 |
| 43.9      | 03010202                    | wsup013f                | PFO                         | Perm ROW, Temp ROW  | Not Crossed<br>By Centerline                      | 0.27  | 0.08                                   | 0.00                                   | Open Cut            | 36.66825 | -76.83005 |
| 43.9      | 03010202                    | wsup013f                | PFO                         | Perm ROW, Temp ROW  | 94  | 0.18  | 0.07                                   | 0.00                                   | Open Cut            | 36.66791 | -76.82988 |
| 44.0      | 03010202                    | wsup013f                | PFO                         | Perm ROW, Temp ROW  | 200   | 0.22  | 0.12                                   | 0.00                                   | Open Cut            | 36.66790 | -76.82869 |
| 44.0      | 03010202                    | wsup013f                | PFO                         | Perm ROW            | 184   | 0.13  | 0.08                                   | 0.00                                   | Open Cut            | 36.66852 | -76.82798 |
| 44.2      | 03010202                    | wsup026e                | PEM                         | Perm ROW, Temp ROW  | 483   | 0.75  | 0.00                                   | 0.00                                   | Open Cut            | 36.66857 | -76.82493 |
| 44.2      | 03010202                    | wsup026f                | PFO                         | Perm ROW            | Not Crossed<br>By Centerline                      | 0.12  | 0.04                                   | 0.00                                   | Open Cut            | 36.66882 | -76.82539 |
| 44.3      | 03010202                    | wsup026f                | PFO                         | Perm ROW            | Not Crossed<br>By Centerline                      | 0.04  | 0.02                                   | 0.00                                   | Open Cut            | 36.66882 | -76.82419 |
| 44.5      | 03010202                    | wsup025f                | PFO                         | Perm ROW, Temp ROW  | 336   | 0.64  | 0.25                                   | 0.00                                   | Open Cut            | 36.66751 | -76.81992 |
| 44.6      | 03010202                    | wsup025f                | PFO                         | Perm ROW, Temp ROW  | Not Crossed<br>By Centerline                      | 0.05  | 0.00                                   | 0.00                                   | NA                  | 36.66735 | -76.81931 |
| 44.6      | 03010202                    | wsup025e                | PEM                         | Perm ROW, Temp ROW  | 31  | 0.04  | 0.00                                   | 0.00                                   | Open Cut            | 36.66755 | -76.81893 |
| 44.6      | 03010202                    | wsup025e                | PEM                         | Surv Corr, Temp ROW | Not Crossed<br>By Centerline                      | 0.01  | 0.00                                   | 0.00                                   | NA                  | 36.66730 | -76.81885 |
| 44.6      | 03010202                    | wsuo017f                | PFO                         | Perm ROW, Temp ROW  | 287   | 0.47  | 0.20                                   | 0.00                                   | Open Cut            | 36.66744 | -76.81820 |
| 45.1      | 03010202                    | wsuo020f                | PFO                         | Perm ROW, Temp ROW  | 62  | 0.11  | 0.04                                   | 0.00                                   | Open Cut            | 36.66759 | -76.80866 |
| 45.1      | 03010202                    | wsuo020f                | PFO                         | Perm ROW, Temp ROW  | 28  | 0.06  | 0.02                                   | 0.00                                   | Open Cut            | 36.66793 | -76.80887 |
| 45.5      | 03010202                    | wsua076f                | PFO                         | Perm ROW, Temp ROW  | 562   | 0.98  | 0.39                                   | 0.00                                   | Open Cut            | 36.67003 | -76.80151 |
| 45.6      | 03010202                    | wsua076e                | PEM                         | Perm ROW            | 82  | 0.12  | 0.00                                   | 0.00                                   | Open Cut            | 36.67069 | -76.80060 |
| 46.1      | 03010202                    | wsua074e                | PEM                         | Perm ROW, Temp ROW  | 2   | 0.00  | 0.00                                   | 0.00                                   | Open Cut            | 36.66814 | -76.79313 |
| 46.1      | 03010202                    | wsua074e                | PEM                         | Perm ROW, Temp ROW  | 11  | 0.02  | 0.00                                   | 0.00                                   | Open Cut            | 36.66808 | -76.79313 |
| 46.2      | 03010202                    | wsua073f                | PFO                         | Perm ROW, Temp ROW  | 1525  | 2.65  | 1.05                                   | 0.00                                   | Open Cut            | 36.66664 | -76.78840 |
| 46.5      | 03010203                    | wsuc101f                | PFO                         | Perm ROW, Temp ROW  | 2347  | 4.03  | 1.60                                   | 0.00                                   | Open Cut            | 36.66875 | -76.78146 |
| 47.0      | 03010203                    | wsuc101e                | PEM                         | Perm ROW, Temp ROW  | 72  | 0.12  | 0.00                                   | 0.00                                   | Open Cut            | 36.67046 | -76.77768 |
| 47.0      | 03010203                    | wsuc101f                | PFO                         | Perm ROW, Temp ROW  | 118   | 0.19  | 0.08                                   | 0.00                                   | Open Cut            | 36.67083 | -76.77795 |
| 47.0      | 03010203                    | wsuc101f                | PFO                         | Perm ROW, Temp ROW  | 783   | 1.37  | 0.54                                   | 0.00                                   | Open Cut            | 36.67155 | -76.77650 |
| 47.2      | 03010203                    | wsuc101s                | PSS                         | Perm ROW, Temp ROW  | 332   | 0.58  | 0.08                                   | 0.00                                   | Open Cut            | 36.67259 | -76.77501 |
| 47.3      | 03010203                    | wsuc100f                | PFO                         | Perm ROW, Temp ROW  | 235   | 0.41  | 0.16                                   | 0.00                                   | Open Cut            | 36.67342 | -76.77408 |
| 47.3      | 03010203                    | wsuc100s                | PSS                         | Perm ROW, Temp ROW  | 281   | 0.46  | 0.06                                   | 0.00                                   | Open Cut            | 36.67389 | -76.77371 |
| 47.4      | 03010203                    | wsuc100f                | PFO                         | Perm ROW, Temp ROW  | 604   | 1.02  | 0.42                                   | 0.00                                   | Open Cut            | 36.67443 | -76.77232 |
| 47.5      | 03010203                    | wsuc005f                | PFO                         | Perm ROW, Temp ROW  | 801   | 2.25  | 0.57                                   | 0.00                                   | Open Cut            | 36.67468 | -76.76670 |
| 47.6      | 03010203                    | wsuc005s                | PSS                         | Perm ROW, Temp ROW  | 1556  | 1.79  | 0.36                                   | 0.00                                   | Open Cut            | 36.67508 | -76.76663 |

APPENDIX 5 (cont'd)

**Atlantic Coast Pipeline Project - Commonwealth of Virginia  
Wetland Crossed and Crossing Methods for the Atlantic Coast Pipeline Coastal Zone**

| Mile Post | Hydrologic Unit Code (HUC8) | Feature ID <sup>a</sup> | Cowardin Class <sup>b</sup> | Facilities Crossed            | Approximate Crossing Length (feet) <sup>c,d</sup> | Temporary Construction Impacts (acres) <sup>e</sup> | Operation Impacts (acres) <sup>f</sup> | Permanent Impacts (acres) <sup>g</sup> | Construction Method | Latitude | Longitude |
|-----------|-----------------------------|-------------------------|-----------------------------|-------------------------------|---|---|--|--|---------------------|----------|-----------|
| 48.1      | 03010203                    | wsuc006e                | PEM                         | Perm ROW                      | 293   | 0.20  | 0.00                                   | 0.00                                   | Open Cut            | 36.67484 | -76.76031 |
| 48.1      | 03010203                    | wsuc006f                | PFO                         | Perm ROW, Temp ROW            | Not Crossed<br>By Centerline                      | 0.28  | 0.07                                   | 0.00                                   | Open Cut            | 36.67454 | -76.76012 |
| 48.6      | 03010203                    | wsuc007e                | PEM                         | Perm ROW, Temp ROW            | 470   | 0.78  | 0.00                                   | 0.00                                   | Open Cut            | 36.67517 | -76.75134 |
| 49.3      | 03010203                    | nwi_va_b_047            | PFO                         | Perm ROW, Temp ROW            | 241   | 0.41  | 0.17                                   | 0.00                                   | Open Cut            | 36.67882 | -76.74082 |
| 49.4      | 03010203                    | nwi_va_b_048            | PFO                         | Perm ROW, Temp ATWS, Temp ROW | 800   | 1.45  | 0.55                                   | 0.00                                   | Open Cut            | 36.67948 | -76.73758 |
| 49.6      | 03010203                    | wsuo027f                | PFO                         | Perm ROW, Temp ROW            | 218   | 0.33  | 0.15                                   | 0.00                                   | Open Cut            | 36.68003 | -76.73546 |
| 49.7      | 03010203                    | wsuo027e                | PEM                         | Perm ROW, Temp ROW            | 141   | 0.24  | 0.00                                   | 0.00                                   | Open Cut            | 36.68066 | -76.73439 |
| 49.7      | 03010203                    | wsuo027f                | PFO                         | Perm ROW, Temp ROW            | Not Crossed<br>By Centerline                      | 0.01  | 0.00                                   | 0.00                                   | NA                  | 36.68057 | -76.73390 |
| 49.7      | 03010203                    | wsuo027f                | PFO                         | Perm ROW, Temp ROW            | 28  | 0.03  | 0.02                                   | 0.00                                   | Open Cut            | 36.68098 | -76.73440 |
| 49.8      | 03010203                    | wsuo026f                | PFO                         | Perm ROW, Temp ROW            | 113   | 0.23  | 0.08                                   | 0.00                                   | Open Cut            | 36.68258 | -76.73267 |
| 49.9      | 03010203                    | wsuo026f                | PFO                         | Perm ROW, Temp ROW            | 76  | 0.16  | 0.06                                   | 0.00                                   | Open Cut            | 36.68298 | -76.73283 |
| 50.0      | 03010203                    | wsuo025f                | PFO                         | Perm ROW, Temp ROW            | 1167  | 2.04  | 0.84                                   | 0.00                                   | Open Cut            | 36.68463 | -76.73219 |
| 50.4      | 03010203                    | wsuo024f                | PFO                         | Surv Corr, Temp ROW           | Not Crossed<br>By Centerline                      | 0.01  | 0.00                                   | 0.00                                   | NA                  | 36.69044 | -76.73346 |
| 50.5      | 03010203                    | wsuo024f                | PFO                         | Perm ROW, Temp ROW            | 56  | 0.08  | 0.04                                   | 0.00                                   | Open Cut            | 36.69202 | -76.73551 |
| 50.5      | 03010203                    | wsuo024f                | PFO                         | Perm ROW, Temp ROW            | 25  | 0.06  | 0.02                                   | 0.00                                   | Open Cut            | 36.69155 | -76.73466 |
| 50.8      | 03010203                    | wsuo022f                | PFO                         | Perm ROW, Temp ROW            | 2402  | 4.11  | 1.66                                   | 0.00                                   | Open Cut            | 36.69992 | -76.73600 |
| 51.4      | 03010203                    | wsuo023f                | PFO                         | Perm ROW, Temp ROW            | 866   | 1.64  | 0.60                                   | 0.00                                   | Open Cut            | 36.70440 | -76.73129 |
| 52.1      | 03010203                    | wsup037f                | PFO                         | Perm ROW, Temp ROW            | 142   | 0.24  | 0.10                                   | 0.00                                   | Open Cut            | 36.71097 | -76.72322 |
| 52.3      | 03010203                    | wsup021f                | PFO                         | Perm ROW, Temp ROW            | 420   | 0.76  | 0.29                                   | 0.00                                   | Open Cut            | 36.71205 | -76.72016 |
| 52.6      | 03010203                    | wsup024s                | PSS                         | Perm ROW, Temp ROW            | 59  | 0.09  | 0.01                                   | 0.00                                   | Open Cut            | 36.71440 | -76.71601 |
| 52.6      | 03010203                    | wsup024s                | PSS                         | Perm ROW, Temp ROW            | 112   | 0.22  | 0.03                                   | 0.00                                   | Open Cut            | 36.71404 | -76.71581 |
| 52.6      | 03010203                    | wsup024s                | PSS                         | Perm ROW, Temp ROW            | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.00                                   | Open Cut            | 36.71442 | -76.71576 |
| 52.6      | 03010203                    | wsup024f                | PFO                         | Perm ROW, Temp ROW            | 90  | 0.15  | 0.06                                   | 0.00                                   | Open Cut            | 36.71452 | -76.71562 |
| 52.7      | 03010203                    | wsup023f                | PFO                         | Perm ROW, Temp ROW            | 259   | 0.43  | 0.18                                   | 0.00                                   | Open Cut            | 36.71537 | -76.71352 |
| 52.8      | 03010203                    | wsup022f                | PFO                         | Perm ROW, Temp ROW            | 1350  | 2.31  | 0.93                                   | 0.00                                   | Open Cut            | 36.71773 | -76.71146 |
| 53.0      | 02080208                    | wsup022s                | PSS                         | Perm ROW, Temp AR, Temp ROW   | 2744  | 5.53  | 0.63                                   | 0.00                                   | Open Cut            | 36.72339 | -76.70783 |
| 53.3      | 02080208                    | nwi_va_h_005            | PSS                         | Temp AR                       | Not Crossed<br>By Centerline                      | 0.18  | 0.00                                   | 0.00                                   | NA                  | 36.72053 | -76.70535 |
| 53.6      | 02080208                    | wsuo039f                | PFO                         | Perm ROW, Temp ROW            | 21  | 0.03  | 0.01                                   | 0.00                                   | Open Cut            | 36.72552 | -76.70640 |
| 53.9      | 02080208                    | wsup027s                | PSS                         | Perm ROW, Temp ROW            | 2052  | 3.46  | 0.47                                   | 0.00                                   | Open Cut            | 36.73249 | -76.70288 |

## APPENDIX 5 (cont'd)

**Atlantic Coast Pipeline Project - Commonwealth of Virginia**  
**Wetland Crossed and Crossing Methods for the Atlantic Coast Pipeline Coastal Zone**

| Mile Post | Hydrologic Unit Code (HUC8) | Feature ID <sup>a</sup> | Cowardin Class <sup>b</sup> | Facilities Crossed  | Approximate Crossing Length (feet) <sup>c,d</sup> | Temporary Construction Impacts (acres) <sup>e</sup> | Operation Impacts (acres) <sup>f</sup> | Permanent Impacts (acres) <sup>g</sup> | Construction Method | Latitude | Longitude |
|-----------|-----------------------------|-------------------------|-----------------------------|---------------------|---|---|--|--|---------------------|----------|-----------|
| 54.4      | 02080208                    | wsup028s                | PSS                         | Perm ROW, Temp ROW  | 359   | 0.63  | 0.08                                   | 0.00                                   | Open Cut            | 36.73686 | -76.69996 |
| 54.5      | 02080208                    | wsup028f                | PFO                         | Perm ROW, Temp ROW  | 85  | 0.14  | 0.06                                   | 0.00                                   | Open Cut            | 36.73747 | -76.69964 |
| 54.6      | 02080208                    | wsup029f                | PFO                         | Perm ROW, Temp ROW  | 203   | 0.35  | 0.14                                   | 0.00                                   | Open Cut            | 36.73841 | -76.69868 |
| 54.6      | 02080208                    | nwi_va_n_006            | PFO                         | Perm ROW, Temp ROW  | 32  | 0.05  | 0.02                                   | 0.00                                   | Open Cut            | 36.73868 | -76.69848 |
| 54.6      | 02080208                    | wsur007f                | PFO                         | Perm ROW, Temp ROW  | 49  | 0.07  | 0.03                                   | 0.00                                   | Open Cut            | 36.73915 | -76.69842 |
| 54.7      | 02080208                    | wsur008f                | PFO                         | Perm ROW, Temp ROW  | Not Crossed<br>By Centerline                      | 0.07  | 0.00                                   | 0.00                                   | Open Cut            | 36.73996 | -76.69705 |
| 54.9      | 02080208                    | wsuo047f                | PFO                         | Perm ROW, Temp ROW  | 795   | 1.36  | 0.55                                   | 0.00                                   | Open Cut            | 36.74368 | -76.69457 |
| 55.1      | 02080208                    | wsuo046f                | PFO                         | Perm ROW, Temp ROW  | 145   | 0.30  | 0.10                                   | 0.00                                   | Open Cut            | 36.74525 | -76.69307 |
| 55.2      | 02080208                    | wsuo046e                | PEM                         | Perm ROW, Temp ROW  | 21  | 0.02  | 0.00                                   | 0.00                                   | Open Cut            | 36.74560 | -76.69321 |
| 55.2      | 02080208                    | wsuo045f                | PFO                         | Perm ROW, Temp ROW  | 319   | 0.57  | 0.21                                   | 0.00                                   | Open Cut            | 36.74686 | -76.69195 |
| 55.4      | 02080208                    | wsuo044f                | PFO                         | Perm ROW, Temp ROW  | 13  | 0.02  | 0.01                                   | 0.00                                   | Open Cut            | 36.74816 | -76.69132 |
| 55.4      | 02080208                    | wsuo044f                | PFO                         | Perm ROW, Temp ROW  | 34  | 0.06  | 0.02                                   | 0.00                                   | Open Cut            | 36.74801 | -76.69105 |
| 56.1      | 02080208                    | wsup032f                | PFO                         | Perm ROW, Temp ROW  | 856   | 1.42  | 0.59                                   | 0.00                                   | Open Cut            | 36.75866 | -76.68729 |
| 56.3      | 02080208                    | wsup032f                | PFO                         | Perm ROW, Temp ROW  | 143   | 0.22  | 0.09                                   | 0.00                                   | Open Cut            | 36.76052 | -76.68665 |
| 56.3      | 02080208                    | wsup033f                | PFO                         | Perm ROW, Temp ROW  | 76  | 0.11  | 0.04                                   | 0.00                                   | Open Cut            | 36.76092 | -76.68609 |
| 56.4      | 02080208                    | wsup034e                | PEM                         | Perm ROW, Temp ROW  | 21  | 0.05  | 0.00                                   | 0.00                                   | Open Cut            | 36.76250 | -76.68517 |
| 56.4      | 02080208                    | wsup034e                | PEM                         | Perm ROW, Temp ROW  | 131   | 0.23  | 0.00                                   | 0.00                                   | Open Cut            | 36.76258 | -76.68490 |
| 56.6      | 02080208                    | wsup035f                | PFO                         | Perm ROW            | Not Crossed<br>By Centerline                      | 0.01  | 0.00                                   | 0.00                                   | Open Cut            | 36.76448 | -76.68251 |
| 56.7      | 02080208                    | wsup035f                | PFO                         | Perm ROW, Temp ROW  | 80  | 0.11  | 0.06                                   | 0.00                                   | Open Cut            | 36.76460 | -76.68200 |
| 57.4      | 02080208                    | wsup038f                | PFO                         | Perm ROW, Temp ROW  | 135   | 0.24  | 0.09                                   | 0.00                                   | Open Cut            | 36.77239 | -76.67328 |
| 57.5      | 02080208                    | wsuo032f                | PFO                         | Perm ROW, Temp ROW  | 441   | 0.79  | 0.31                                   | 0.00                                   | Open Cut            | 36.77382 | -76.67084 |
| 57.9      | 02080208                    | wsuo033f                | PFO                         | Perm ROW, Temp ROW  | 465   | 0.78  | 0.32                                   | 0.00                                   | Open Cut            | 36.77693 | -76.66504 |
| 59.3      | 02080208                    | wsuo034f                | PFO                         | Perm ROW, Temp ROW  | 37  | 0.05  | 0.03                                   | 0.00                                   | Open Cut            | 36.79041 | -76.64911 |
| 59.3      | 02080208                    | wsuo034f                | PFO                         | Surv Corr, Temp ROW | Not Crossed<br>By Centerline                      | 0.01  | 0.00                                   | 0.00                                   | NA                  | 36.79011 | -76.64914 |
| 59.4      | 02080208                    | wsuo035f                | PFO                         | Perm ROW, Temp ROW  | 63  | 0.09  | 0.04                                   | 0.00                                   | Open Cut            | 36.79042 | -76.64789 |
| 59.4      | 02080208                    | wsuo035f                | PFO                         | Perm ROW, Temp ROW  | 44  | 0.11  | 0.04                                   | 0.00                                   | Open Cut            | 36.79019 | -76.64745 |
| 59.4      | 02080208                    | wsuo035f                | PFO                         | Perm ROW            | 37  | 0.04  | 0.02                                   | 0.00                                   | Open Cut            | 36.79040 | -76.64756 |
| 62.7      | 02080208                    | wsuo041f                | PFO                         | Perm ROW, Temp ROW  | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.00                                   | NA                  | 36.79386 | -76.59229 |
| 62.7      | 02080208                    | wsuo041f                | PFO                         | Perm ROW, Temp ROW  | 3   | 0.02  | 0.00                                   | 0.00                                   | Open Cut            | 36.79351 | -76.59243 |
| 62.7      | 02080208                    | wsuo041f                | PFO                         | Perm ROW, Temp ROW  | 21  | 0.04  | 0.01                                   | 0.00                                   | Open Cut            | 36.79397 | -76.59221 |

APPENDIX 5 (cont'd)

**Atlantic Coast Pipeline Project - Commonwealth of Virginia  
Wetland Crossed and Crossing Methods for the Atlantic Coast Pipeline Coastal Zone**

| Mile Post | Hydrologic Unit Code (HUC8) | Feature ID <sup>a</sup>   | Cowardin Class <sup>b</sup> | Facilities Crossed            | Approximate Crossing Length (feet) <sup>c,d</sup> | Temporary Construction Impacts (acres) <sup>e</sup> | Operation Impacts (acres) <sup>f</sup> | Permanent Impacts (acres) <sup>g</sup> | Construction Method | Latitude | Longitude |
|-----------|-----------------------------|---------------------------|-----------------------------|-------------------------------|---|---|--|--|---------------------|----------|-----------|
| 63.0      | 02080208                    | wsuo042f                  | PFO                         | Perm ROW, Temp ROW            | 52  | 0.11  | 0.04                                   | 0.00                                   | Open Cut            | 36.79262 | -76.58830 |
| 63.0      | 02080208                    | wsuo042f                  | PFO                         | Perm ROW, Temp ROW            | 32  | 0.05  | 0.02                                   | 0.00                                   | Open Cut            | 36.79301 | -76.58806 |
| 63.6      | 02080208                    | wsup015f <sup>h</sup>     | PFO                         | Perm ROW                      | 50  | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.79177 | -76.57761 |
| 63.6      | 02080208                    | wsup015e <sup>h</sup>     | PEM                         | Perm ROW                      | 20  | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.79204 | -76.57730 |
| 63.6      | 02080208                    | nwi_va_c_001 <sup>h</sup> | E2E                         | Perm ROW                      | 1938  | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.79306 | -76.57342 |
| 64.0      | 02080208                    | wsup018e <sup>h</sup>     | PEM                         | Perm ROW                      | 50  | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.79363 | -76.56992 |
| 64.2      | 02080208                    | nwi_va_h_006              | E2EM                        | Perm AR                       | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.12                                   | NA                  | 36.79588 | -76.56658 |
| 64.2      | 02080208                    | nwi_va_h_007              | E2EM                        | Perm AR                       | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.26                                   | NA                  | 36.79801 | -76.56637 |
| 64.3      | 02080208                    | wsup016e <sup>h</sup>     | PEM                         | Perm ROW                      | 37  | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.79477 | -76.56559 |
| 64.3      | 02080208                    | nwi_va_c_002 <sup>h</sup> | E2E                         | Perm ROW                      | 297   | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.79474 | -76.56430 |
| 64.4      | 02080208                    | nwi_va_c_005 <sup>h</sup> | E2U                         | Perm ROW                      | 1864  | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.79509 | -76.55916 |
| 64.8      | 02080208                    | wsuc112e <sup>h</sup>     | PEM                         | Perm ROW                      | 349   | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.79533 | -76.55529 |
| 66.1      | 02080208                    | wsuo043e                  | PEM                         | Perm ROW, Temp ROW            | 711   | 0.63  | 0.00                                   | 0.00                                   | Open Cut            | 36.78912 | -76.53238 |
| 66.2      | 02080208                    | wsuo043f                  | PFO                         | Perm ROW, Temp ROW            | Not Crossed<br>By Centerline                      | 0.67  | 0.06                                   | 0.00                                   | Open Cut            | 36.78885 | -76.53283 |
| 66.3      | 02080208                    | wsuo018e                  | PEM                         | Perm ROW                      | 3487  | 2.50  | 0.00                                   | 0.00                                   | Open Cut            | 36.78661 | -76.52609 |
| 66.3      | 02080208                    | wsuo018f                  | PFO                         | Temp AR                       | Not Crossed<br>By Centerline                      | 0.11  | 0.00                                   | 0.00                                   | NA                  | 36.78641 | -76.53265 |
| 66.3      | 02080208                    | wsuo018f                  | PFO                         | Temp AR                       | Not Crossed<br>By Centerline                      | 0.14  | 0.00                                   | 0.00                                   | NA                  | 36.78664 | -76.53204 |
| 66.3      | 02080208                    | wsuo018f                  | PFO                         | Temp AR                       | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.00                                   | NA                  | 36.78673 | -76.53167 |
| 66.4      | 02080208                    | wsuo018f                  | PFO                         | Perm ROW, Temp AR, Temp ROW   | Not Crossed<br>By Centerline                      | 0.74  | 0.00                                   | 0.00                                   | Open Cut            | 36.78736 | -76.53053 |
| 66.7      | 02080208                    | wsuo018s                  | PSS                         | Perm ROW, Temp AR, Temp ROW   | Not Crossed<br>By Centerline                      | 3.03  | 0.00                                   | 0.00                                   | Open Cut            | 36.78590 | -76.52547 |
| 67.0      | 02080208                    | wsuo019e                  | PEM                         | Perm ROW                      | 2181  | 1.82  | 0.00                                   | 0.00                                   | Open Cut            | 36.78079 | -76.51543 |
| 67.2      | 02080208                    | wsuo019s                  | PSS                         | Perm ROW, Temp ROW            | 1066  | 3.75  | 0.29                                   | 0.00                                   | Open Cut            | 36.78039 | -76.51580 |
| 68.1      | 02080208                    | wsup020e                  | PEM                         | Perm ROW                      | 2259  | 0.27  | 0.00                                   | 0.00                                   | Open Cut            | 36.76760 | -76.50890 |
| 68.5      | 02080208                    | nwi_va_o_002              | PEM                         | Perm ROW, Temp ATWS, Temp ROW | 793   | 1.26  | 0.00                                   | 0.00                                   | Open Cut            | 36.76580 | -76.50369 |
| 68.6      | 02080208                    | nwi_va_o_003              | PSS                         | Temp ATWS, Temp ROW           | Not Crossed<br>By Centerline                      | 0.13  | 0.00                                   | 0.00                                   | NA                  | 36.76454 | -76.50605 |

APPENDIX 5 (cont'd)

**Atlantic Coast Pipeline Project - Commonwealth of Virginia  
Wetland Crossed and Crossing Methods for the Atlantic Coast Pipeline Coastal Zone**

| Mile Post | Hydrologic Unit Code (HUC8) | Feature ID <sup>a</sup> | Cowardin Class <sup>b</sup> | Facilities Crossed          | Approximate Crossing Length (feet) <sup>c,d</sup> | Temporary Construction Impacts (acres) <sup>e</sup> | Operation Impacts (acres) <sup>f</sup> | Permanent Impacts (acres) <sup>g</sup> | Construction Method | Latitude | Longitude |
|-----------|-----------------------------|-------------------------|-----------------------------|-----------------------------|---|---|--|--|---------------------|----------|-----------|
| 68.8      | 02080208                    | nwi_va_o_004            | PFO                         | Temp ROW                    | Not Crossed By Centerline                         | 0.34  | 0.00                                   | 0.00                                   | NA                  | 36.76571 | -76.50236 |
| 69.0      | 02080208                    | nwi_va_o_005            | PFO                         | Perm ROW                    | Not Crossed By Centerline                         | 0.15  | 0.05                                   | 0.00                                   | Open Cut            | 36.76712 | -76.49953 |
| 69.0      | 02080208                    | nwi_va_o_006            | PSS                         | Temp ROW                    | Not Crossed By Centerline                         | 0.08  | 0.00                                   | 0.00                                   | NA                  | 36.76676 | -76.49904 |
| 69.2      | 02080208                    | nwi_va_o_007            | PFO                         | Perm ROW                    | Not Crossed By Centerline                         | 0.50  | 0.20                                   | 0.00                                   | Open Cut            | 36.76825 | -76.49602 |
| 69.8      | 02080208                    | nwi_va_o_010            | PFO                         | Perm ROW, Temp ROW          | Not Crossed By Centerline                         | 6.88  | 1.13                                   | 0.00                                   | Open Cut            | 36.77090 | -76.48615 |
| 70.3      | 02080208                    | nwi_va_o_012            | PEM                         | Perm ROW                    | Not Crossed By Centerline                         | 0.03  | 0.00                                   | 0.00                                   | NA                  | 36.77360 | -76.47919 |
| 70.5      | 02080208                    | nwi_va_o_012            | PEM                         | Perm ROW                    | Not Crossed By Centerline                         | 0.00  | 0.00                                   | 0.00                                   | NA                  | 36.77507 | -76.47458 |
| 70.6      | 02080208                    | nwi_va_o_010            | PFO                         | Perm ROW, Temp ROW          | Not Crossed By Centerline                         | 0.05  | 0.00                                   | 0.00                                   | Open Cut            | 36.77463 | -76.47422 |
| 70.6      | 02080208                    | nwi_va_o_013            | PFO                         | Perm ROW, Temp ROW          | 2194  | 3.70  | 1.51                                   | 0.00                                   | Open Cut            | 36.77505 | -76.47098 |
| 71.1      | 02080208                    | wsuo011f                | PFO                         | Perm ROW, Temp ROW          | 419   | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.77079 | -76.46665 |
| 71.2      | 02080208                    | wsuo011e                | PEM                         | Perm ROW, Temp ROW          | 22  | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.77048 | -76.46551 |
| 71.8      | 02080208                    | wchr002f                | PFO                         | Perm ROW, Temp ROW          | 7177  | 10.57   | 4.88                                   | 0.00                                   | Open Cut            | 36.76925 | -76.44501 |
| 71.8      | 02080208                    | wchr002e                | PEM                         | Temp ROW                    | Not Crossed By Centerline                         | 0.02  | 0.00                                   | 0.00                                   | NA                  | 36.76869 | -76.45659 |
| 71.8      | 02080208                    | wchr002f                | PFO                         | Temp ROW                    | Not Crossed By Centerline                         | 0.02  | 0.00                                   | 0.00                                   | NA                  | 36.76869 | -76.45659 |
| 73.1      | 02080208                    | wchr002e                | PEM                         | Perm ROW, Temp ROW          | 99  | 1.92  | 0.00                                   | 0.00                                   | Open Cut            | 36.76884 | -76.44550 |
| 73.1      | 02080208                    | wchr002f                | PFO                         | Perm ROW, Temp ROW          | 1681  | 2.88  | 1.16                                   | 0.00                                   | Open Cut            | 36.76666 | -76.43115 |
| 73.5      | 02080208                    | wchr002e                | PEM                         | Perm ROW, Temp ROW          | 240   | 0.41  | 0.00                                   | 0.00                                   | Open Cut            | 36.76456 | -76.42900 |
| 73.5      | 02080208                    | wchr002f                | PFO                         | Perm ROW, Temp ROW          | 586   | 1.03  | 0.40                                   | 0.00                                   | Open Cut            | 36.76382 | -76.42820 |
| 73.6      | 02080208                    | wchr002f                | PFO                         | Perm ROW, Temp ROW          | 245   | 0.42  | 0.17                                   | 0.00                                   | Open Cut            | 36.76307 | -76.42705 |
| 73.7      | 02080208                    | wchr002f                | PFO                         | Perm ROW, Temp ROW          | 1431  | 2.47  | 0.98                                   | 0.00                                   | Open Cut            | 36.76157 | -76.42484 |
| 74.0      | 02080208                    | wchr002f                | PFO                         | Perm ROW, Temp AR, Temp ROW | 1885  | 3.34  | 1.30                                   | 0.00                                   | Open Cut            | 36.75849 | -76.42036 |
| 74.1      | 02080208                    | wchr002f                | PFO                         | Temp AR                     | Not Crossed By Centerline                         | 0.10  | 0.00                                   | 0.00                                   | NA                  | 36.76064 | -76.41979 |
| 74.1      | 02080208                    | wchr002f                | PFO                         | Temp AR                     | Not Crossed By Centerline                         | 0.06  | 0.00                                   | 0.00                                   | NA                  | 36.76089 | -76.41826 |

APPENDIX 5 (cont'd)

**Atlantic Coast Pipeline Project - Commonwealth of Virginia  
Wetland Crossed and Crossing Methods for the Atlantic Coast Pipeline Coastal Zone**

| Mile Post | Hydrologic Unit Code (HUC8) | Feature ID <sup>a</sup> | Cowardin Class <sup>b</sup> | Facilities Crossed            | Approximate Crossing Length (feet) <sup>c,d</sup> | Temporary Construction Impacts (acres) <sup>e</sup> | Operation Impacts (acres) <sup>f</sup> | Permanent Impacts (acres) <sup>g</sup> | Construction Method | Latitude | Longitude |
|-----------|-----------------------------|-------------------------|-----------------------------|-------------------------------|---|---|--|--|---------------------|----------|-----------|
| 74.2      | 02080208                    | wchr002f                | PFO                         | Temp AR                       | Not Crossed<br>By Centerline                      | 0.08  | 0.00                                   | 0.00                                   | NA                  | 36.76138 | -76.41487 |
| 74.3      | 02080208                    | wchr002f                | PFO                         | Perm AR, Perm ROW, Temp ROW   | 3853  | 6.63  | 2.65                                   | 0.05                                   | Open Cut            | 36.75594 | -76.41188 |
| 74.7      | 02080208                    | wchr002f                | PFO                         | Temp AR                       | Not Crossed<br>By Centerline                      | 0.02  | 0.00                                   | 0.00                                   | NA                  | 36.76170 | -76.41260 |
| 74.8      | 02080208                    | wchr002f                | PFO                         | Temp AR                       | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.00                                   | NA                  | 36.76191 | -76.41130 |
| 75.0      | 02080208                    | wchr002f                | PFO                         | Temp AR                       | Not Crossed<br>By Centerline                      | 0.09  | 0.00                                   | 0.15                                   | NA                  | 36.76233 | -76.40858 |
| 75.0      | 02080208                    | wchr002f                | PFO                         | Perm AR                       | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.00                                   | NA                  | 36.75853 | -76.40617 |
| 75.1      | 02080208                    | wchr002f                | PFO                         | Perm AR                       | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.02                                   | NA                  | 36.76145 | -76.40685 |
| 75.1      | 02080208                    | wchc003s                | PSS                         | Perm AR                       | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.07                                   | NA                  | 36.76330 | -76.40727 |
| 75.1      | 02080208                    | wchr001f                | PFO                         | Perm AR, Perm ROW, Temp ROW   | 4845  | 7.90  | 3.33                                   | 0.18                                   | Open Cut            | 36.75852 | -76.39748 |
| 75.1      | 02080208                    | wchr001f                | PFO                         | Perm AR                       | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.07                                   | NA                  | 36.76145 | -76.40642 |
| 76.0      | 02080208                    | nwi_va_i_008            | PFO                         | Perm ROW, Temp ATWS, Temp ROW | 233   | 0.42  | 0.16                                   | 0.00                                   | Open Cut            | 36.75894 | -76.38824 |
| 76.2      | 02080208                    | nwi_va_o_014            | PEM                         | Perm ROW                      | 229   | 0.26  | 0.00                                   | 0.00                                   | Open Cut            | 36.75816 | -76.38674 |
| 76.3      | 02080208                    | nwi_va_o_015            | PFO                         | Perm ROW                      | 1410  | 1.62  | 0.97                                   | 0.00                                   | Open Cut            | 36.75893 | -76.38433 |
| 76.4      | 02080208                    | wcho001f                | PFO                         | Perm ROW                      | 2023  | 2.26  | 1.37                                   | 0.00                                   | Open Cut            | 36.76033 | -76.37965 |
| 76.9      | 02080208                    | wchc002f                | PFO                         | Perm ROW                      | 179   | 0.20  | 0.12                                   | 0.00                                   | Open Cut            | 36.76161 | -76.37255 |
| 77.1      | 02080208                    | wchc001f                | PFO                         | Perm ROW, Temp ROW            | 54  | 0.11  | 0.04                                   | 0.00                                   | Open Cut            | 36.76191 | -76.37050 |
| 77.3      | 02080208                    | wcho002f                | PFO                         | Perm ROW, Temp ROW            | 8   | 0.07  | 0.01                                   | 0.00                                   | Open Cut            | 36.76243 | -76.36608 |
| 77.4      | 02080208                    | wcho004f                | PFO                         | Perm ROW, Temp ROW            | 84  | 0.19  | 0.06                                   | 0.00                                   | Open Cut            | 36.76238 | -76.36545 |
| 77.4      | 02080208                    | wcho004f                | PFO                         | Perm ROW, Temp ROW            | 49  | 0.09  | 0.03                                   | 0.00                                   | Open Cut            | 36.76208 | -76.36514 |
| 77.9      | 02080208                    | wcho011e3               | PEM                         | Perm ROW, Temp ROW            | 21  | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.76137 | -76.35648 |
| 78.0      | 02080208                    | wcho011e3               | PEM                         | Perm ROW, Temp ROW            | 34  | 0.13  | 0.00                                   | 0.00                                   | Open Cut            | 36.76130 | -76.35568 |
| 78.0      | 02080208                    | wcho011f3               | PFO                         | Perm ROW, Temp ROW            | 602   | 1.11  | 0.42                                   | 0.00                                   | Open Cut            | 36.76137 | -76.35309 |
| 78.0      | 02080208                    | wcho011f3               | PFO                         | Surv Corr, Temp ROW           | Not Crossed<br>By Centerline                      | 0.00  | 0.00                                   | 0.00                                   | NA                  | 36.76162 | -76.35515 |
| 78.2      | 02080208                    | wcho011f                | PFO                         | Temp AR, Perm ROW, Temp ROW   | 837   | 1.28  | 0.58                                   | 0.00                                   | Open Cut            | 36.76229 | -76.35102 |
| 78.3      | 02080208                    | nwi_va_182              | PFO                         | Temp AR                       | Not Crossed<br>By Centerline                      | 0.01  | 0.00                                   | 0.00                                   | NA                  | 36.76355 | -76.35122 |



APPENDIX 5 (cont'd)

**Atlantic Coast Pipeline Project - Commonwealth of Virginia  
Wetland Crossed and Crossing Methods for the Atlantic Coast Pipeline Coastal Zone**

| Mile Post | Hydrologic Unit Code (HUC8) | Feature ID <sup>a</sup> | Cowardin Class <sup>b</sup> | Facilities Crossed          | Approximate Crossing Length (feet) <sup>c,d</sup> | Temporary Construction Impacts (acres) <sup>e</sup> | Operation Impacts (acres) <sup>f</sup> | Permanent Impacts (acres) <sup>g</sup> | Construction Method | Latitude | Longitude |
|-----------|-----------------------------|-------------------------|-----------------------------|-----------------------------|---|---|--|--|---------------------|----------|-----------|
| 78.3      | 02080208                    | nwi_va_183              | PEM                         | Temp AR                     | Not Crossed By Centerline                         | 0.00  | 0.00                                   | 0.00                                   | NA                  | 36.76354 | -76.35126 |
| 78.3      | 02080208                    | nwi_va_182              | PFO                         | Temp AR                     | Not Crossed By Centerline                         | 0.01  | 0.00                                   | 0.00                                   | NA                  | 36.76371 | -76.35016 |
| 78.3      | 02080208                    | wcho011f                | PFO                         | Temp AR                     | Not Crossed By Centerline                         | 0.00  | 0.00                                   | 0.00                                   | NA                  | 36.76373 | -76.35001 |
| 78.5      | 02080208                    | wcho011f                | PFO                         | Temp AR                     | Not Crossed By Centerline                         | 0.24  | 0.00                                   | 0.00                                   | NA                  | 36.76419 | -76.34718 |
| 78.5      | 02080208                    | wcho011e                | PEM                         | Temp AR, Perm ROW, Temp ROW | 394   | 2.46  | 0.00                                   | 0.00                                   | Open Cut            | 36.76357 | -76.34646 |
| 78.6      | 02080208                    | wcho011e                | PEM                         | Temp AR                     | Not Crossed By Centerline                         | 0.01  | 0.00                                   | 0.00                                   | NA                  | 36.76434 | -76.34590 |
| 79.1      | 02080208                    | wcho008e                | PEM                         | Perm ROW                    | 5   | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.76525 | -76.33662 |
| 79.5      | 02080208                    | wcho005e                | PEM                         | Perm ROW, Temp ROW          | Not Crossed By Centerline                         | 0.11  | 0.00                                   | 0.00                                   | NA                  | 36.76639 | -76.32987 |
| 79.9      | 02080208                    | wcho009e <sup>h</sup>   | PEM                         | Perm ROW                    | 72  | 0.08  | 0.00                                   | 0.00                                   | Open Cut            | 36.76436 | -76.32344 |
| 79.9      | 02080208                    | wcho009f <sup>h</sup>   | PFO                         | Perm ROW, Temp ROW          | Not Crossed By Centerline                         | 0.06  | 0.00                                   | 0.00                                   | NA                  | 36.76475 | -76.32318 |
| 80.4      | 02080208                    | wcho010e                | PEM                         | Perm ROW, Temp ROW          | 1594  | 1.67  | 0.00                                   | 0.00                                   | Open Cut            | 36.76489 | -76.31424 |
| 80.4      | 02080208                    | wcho010f                | PFO                         | Perm ROW, Temp ROW          | Not Crossed By Centerline                         | 0.06  | 0.02                                   | 0.00                                   | Open Cut            | 36.76508 | -76.31528 |
| 80.4      | 02080208                    | wchro001e <sup>h</sup>  | PEM                         | Perm ROW                    | Not Crossed By Centerline                         | 0.01  | 0.00                                   | 0.00                                   | Open Cut            | 36.76473 | -76.31477 |
| 80.7      | 02080208                    | wcho010f                | PFO                         | Perm ROW, Temp ROW          | 443   | 1.91  | 0.36                                   | 0.00                                   | Open Cut            | 36.76564 | -76.31186 |
| 80.8      | 02080208                    | wchro002e <sup>h</sup>  | PEM                         | Perm ROW, Temp ROW          | 487   | 1.02  | 0.00                                   | 0.00                                   | Open Cut            | 36.76761 | -76.30817 |
| 80.8      | 02080208                    | wchro002e               | PEM                         | Temp ROW                    | Not Crossed By Centerline                         | 0.00  | 0.00                                   | 0.00                                   | NA                  | 36.76683 | -76.30861 |
| 80.8      | 02080208                    | wchro002e               | PEM                         | Temp ROW                    | Not Crossed By Centerline                         | 0.00  | 0.00                                   | 0.00                                   | NA                  | 36.76684 | -76.30860 |
| 80.8      | 02080208                    | wchro002e               | PEM                         | Perm ROW, Temp ROW          | Not Crossed By Centerline                         | 0.06  | 0.00                                   | 0.00                                   | Open Cut            | 36.76669 | -76.30826 |
| 80.9      | 02080208                    | wchro002f <sup>h</sup>  | PFO                         | Perm ROW, Temp ROW          | 305   | 0.39  | 0.14                                   | 0.00                                   | Open Cut            | 36.76840 | -76.30787 |
| 80.9      | 02080208                    | wchro002f               | PFO                         | Perm ROW, Temp ROW          | 351   | 0.46  | 0.20                                   | 0.00                                   | Open Cut            | 36.76926 | -76.30777 |
| 80.9      | 02080208                    | wchro002f               | PFO                         | Perm ROW                    | Not Crossed By Centerline                         | 0.00  | 0.00                                   | 0.00                                   | Open Cut            | 36.76883 | -76.30808 |
| 81.0      | 02080208                    | wchro002f               | PFO                         | Perm ROW                    | 8   | 0.00  | 0.00                                   | 0.00                                   | Open Cut            | 36.76888 | -76.30806 |

APPENDIX 5 (cont'd)

**Atlantic Coast Pipeline Project - Commonwealth of Virginia  
Wetland Crossed and Crossing Methods for the Atlantic Coast Pipeline Coastal Zone**

| Mile Post    | Hydrologic Unit Code (HUC8) | Feature ID <sup>a</sup> | Cowardin Class <sup>b</sup> | Facilities Crossed  | Approximate Crossing Length (feet) <sup>c,d</sup> | Temporary Construction Impacts (acres) <sup>e</sup> | Operation Impacts (acres) <sup>f</sup> | Permanent Impacts (acres) <sup>g</sup> | Construction Method | Latitude | Longitude |
|--------------|-----------------------------|-------------------------|-----------------------------|---------------------|---|---|--|--|---------------------|----------|-----------|
| 81.0         | 02080208                    | wchro002e               | PEM                         | Perm ROW            | Not Crossed By Centerline                         | 0.12  | 0.00                                   | 0.00                                   | Open Cut            | 36.76923 | -76.30822 |
| 81.0         | 02080208                    | wcho012e                | PEM                         | Perm ROW, Temp ROW  | 6   | 0.01  | 0.00                                   | 0.00                                   | Open Cut            | 36.77001 | -76.30808 |
| 81.4         | 02080208                    | wcho014f                | PFO                         | Perm ROW, Temp ROW  | Not Crossed By Centerline                         | 1.36  | 0.01                                   | 0.00                                   | Open Cut            | 36.77341 | -76.30324 |
| 81.7         | 02080208                    | wcho016f                | PFO                         | Perm ROW, Temp ROW  | Not Crossed By Centerline                         | 0.17  | 0.00                                   | 0.00                                   | Open Cut            | 36.77420 | -76.29827 |
| 81.7         | 02080208                    | wcho017e                | PEM                         | Surv Corr, Temp ROW | Not Crossed By Centerline                         | 0.05  | 0.00                                   | 0.00                                   | NA                  | 36.77380 | -76.29797 |
| 81.8         | 02080208                    | wcho016e <sup>h</sup>   | PEM                         | Perm ROW, Temp ROW  | 319   | 0.00  | 0.00                                   | 0.00                                   | HDD                 | 36.77418 | -76.29725 |
| 82.4         | 02080208                    | nwi_va_i_009            | PFO                         | Perm ROW, Temp ROW  | 452   | 0.39  | 0.23                                   | 0.00                                   | Open Cut            | 36.77509 | -76.28486 |
| 82.5         | 02080208                    | nwi_va_n_007            | PFO                         | Perm ROW            | 63  | 0.05  | 0.04                                   | 0.00                                   | Open Cut            | 36.77508 | -76.28431 |
| 82.7         | 02080208                    | wcha001f                | PFO                         | Perm MLR            | Not Crossed By Centerline                         | 0.00  | 0.00                                   | 0.14                                   | NA                  | 36.77343 | -76.28128 |
| <b>Total</b> |                             |                         |                             |                     | <b>82,981</b>                                     | <b>140.77</b>                                       | <b>40.55</b>                           | <b>1.22</b>                            |                     |          |           |

<sup>a</sup> Feature ID starting with NWI represent wetlands that are based on desktop data from the National Wetlands Inventory. There are no field data sheets for these features included in Appendix 6.

<sup>b</sup> Wetland types according to Cowardin et al. (1979):  
PFO = palustrine forested  
PSS = palustrine scrub-shrub  
PEM = palustrine emergent  
PUB = palustrine unconsolidated bottom  
E = estuarine (E2E, E2EM, E2F, and E2U)

<sup>c</sup> Approximate Crossing Length represents linear feet of route centerline crossing.

<sup>d</sup> Not Crossed By Centerline = wetland occurs within workspace but is not crossed by the centerline, trenching thru the wetland is not expected.

<sup>e</sup> Temporary impacts include construction impacts due to clearing and trenching activates during construction, as well as temporary access road impacts that will be restored to preconstruction contours and revegetated after construction.

<sup>f</sup> Operational impacts are associated with wetland type conversion impacts as a result of operational requirements that allow a 10-foot-wide corridor centered over the pipeline to be maintained in an herbaceous state, and for the removal of trees within 15 feet on either side of the pipeline. To determine conversion impacts on scrub-shrub wetlands, a 10-foot-wide corridor centered over the pipeline was assessed. A 30-foot-wide corridor centered over the pipeline was assessed for forested wetlands.

<sup>g</sup> Permanent impacts will occur for above ground facility and permanent access road construction, and will result in loss of wetlands.

<sup>h</sup> Tidal wetland verified with VMRC.

Note: The totals shown in this table may not equal the sum of addends due to rounding.

**ATLANTIC COAST PIPELINE, LLC  
ATLANTIC COAST PIPELINE**

**VCP Consistency Certification**

**APPENDIX 6  
Waterbody and Wetland Datasheets and Photos**

# Linear Waterbody Data Sheet

| Survey Description   |  |   |   |
|--|--|---|---|
| Project Name:<br>Atlantic Coast Pipeline   |  | Waterbody Name:<br>Blackwater River   |   |
| Waterbody ID:<br>ssoa010   |  | Date:<br>12/6/2014  |   |
| State:<br>Virginia   | County:<br>Southampton   | Company:<br>NRG   | Crew Member Initials:<br>GB, RL                 |
| Photos:<br>3 photos  |  |   |   |
| Tract Number(s):<br>25-107; 26-001, county line Southampton, Suffolk   |  | Nearest Milepost:<br>37.0 -VNG Lateral  |   |
| Associated Wetland ID(s):<br>wsoa024; down line wetland yet to be delineated   |  |   |   |
| Survey Type:<br>(check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |  |   |   |
| Physical Attributes  |  |   |   |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |  |   |   |
| Waterbody Type:<br>(check one) <input checked="" type="checkbox"/> River <input type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |  |   |   |
| OHWM Width:<br>185.0 ft.   |  | OHWM Indicator:<br>(check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining |   |
| Height:<br>10.0 ft.  |  | <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change              |   |
| N/A <input type="checkbox"/>   |  |   |   |
| Width of Waterbody - Top of Bank to Top of Bank:<br>195.0 ft.  | Width of Waterbody - Toe of Slope to Toe of Slope:<br>145.0 ft.  | Width of Waterbody - Water Edge to Water Edge:<br>180.0 ft.   | Depth of Water:<br>(Approx.)<br>8.0 ft.         |
| Sinuosity:<br>(check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   |  | Water velocity:<br>(Approx.)<br>0.33 fps  | Bank height:<br>Right: 4.0 ft.<br>Left: 3.0 ft. |
| N/A <input type="checkbox"/>   |  | Bank slope:<br>Right: 65 degrees<br>Left: 75 degrees  |   |
| Qualitative Attributes   |  |   |   |
| Water Appearance:<br>(check one) <input type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input checked="" type="checkbox"/> Other: organics, black water                     |  |   |   |
| Substrate:<br>(check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: |  |   |   |
| % of Substrate: _____% _____% _____% _____% 15% 80% 5% _____%  |  |   |   |
| Width of Riparian Zone:<br>2000.0 ft.  | Vegetative Layers:<br>(check all that apply) <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs |   |   |
| N/A <input type="checkbox"/>   | Avg. DBH of Dominants:<br>(approx.) 13.0 in. 1.0 in.   |   |   |
| Dominant Bank Vegetation (list):<br>Baldcypress, water tupelo, laurel oak, swamp chestnut oak, river birch, green ash, red maple, greenbrier, crossvine, grape, bearded sedge, panic grass, cane   |  |   |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>Coarse woody debris, roots and cypress knees along banks  |  |   |   |
| Aquatic Organisms Observed (list):<br>Fish, beaver lodge   |  |   |   |
| T&E Species Observed (list):<br>none   |  |   |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>Refuse brought in with flow  |  |   |   |
| Tributary is:<br>(check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |  |   |   |
| Stream Quality <sup>a</sup> :<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |  |   |   |

Waterbody ID:

ssoa010

<sup>a</sup> **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

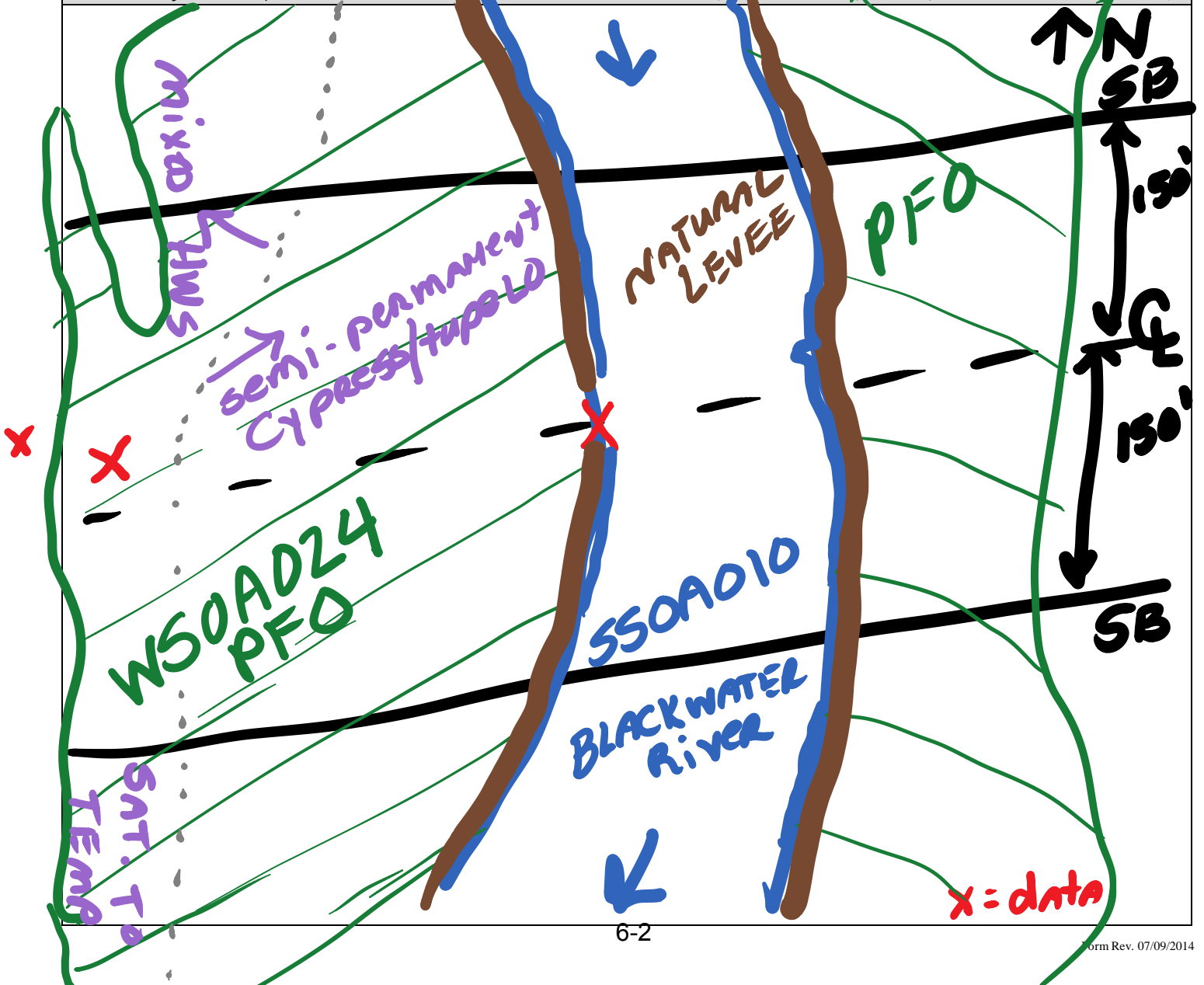
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

Blackwater River, continues out of corridor in both directions. Large wetlands on both sides in floodplain abutting natural levees, semi-permanently flooded with bald cypress and water tupelo as dominants.

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)





Waterbody SSOA010 facing southeast downstream



Waterbody SSOA010 facing northeast upstream



Waterbody SSOA010 facing east across

# Linear Waterbody Data Sheet

| Survey Description  |   |  |   |   |
|---|---|--|---|---|
| Project Name:<br>Atlantic Coast Pipeline  |   | Waterbody Name:<br>UNT to Blackwater River   |   | Waterbody ID:<br>ssua004                            |
| Date:<br>12/8/2014  |   |  |   |   |
| State:<br>Virginia  | County:<br>Suffolk  | Company:<br>NRG  | Crew Member Initials:<br>GB, RL                 | Photos:<br>3 photos                                 |
| Tract Number(s):<br>26-003; 26-002; access road 71b   |   | Nearest Milepost:<br>37.75   |   | Associated Wetland ID(s):<br>wsua008                |
| Survey Type:<br><i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input checked="" type="checkbox"/> Access Road <input type="checkbox"/> Other:   |   |  |   |   |
| Physical Attributes   |   |  |   |   |
| Stream Classification:<br><i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |   |  |   |   |
| Waterbody Type:<br><i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |   |  |   |   |
| OHWM Width:<br>4.0 ft.  |   | OHWM Indicator:<br><i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining |   |   |
| Height:<br>1.5 ft.  |   | <input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change          |   |   |
| N/A <input type="checkbox"/>  |   |  |   |   |
| Width of Waterbody - Top of Bank to Top of Bank:<br>7.0 ft.   | Width of Waterbody - Toe of Slope to Toe of Slope:<br>3.0 ft. | Width of Waterbody - Water Edge to Water Edge:<br>3.25 ft.   | Depth of Water:<br><i>(Approx.)</i><br>0.75 ft. |   |
| N/A <input type="checkbox"/>  |   | N/A <input type="checkbox"/>   |   |   |
| Sinuosity:<br><i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   |   | Water velocity:<br><i>(Approx.)</i><br>0.75 fps  |   | Bank slope<br>Right: 60 degrees<br>Left: 80 degrees |
| N/A <input type="checkbox"/>  |   | N/A <input type="checkbox"/>   |   |   |
| Qualitative Attributes  |   |  |   |   |
| Water Appearance:<br><i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:   |   |  |   |   |
| Substrate:<br><i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: |   |  |   |   |
| % of Substrate:      _____%      _____%      _____%      _____%      70%      25%      5%      _____%   |   |  |   |   |
| Width of Riparian Zone:<br>100.0 ft.  |   | Vegetative Layers:<br><i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs  |   |   |
| N/A <input type="checkbox"/>  |   | Avg. DBH of Dominants:<br><i>(approx.)</i> 8.0 in.      1.5 in.  |   |   |
| Dominant Bank Vegetation <i>(list)</i> :<br>Sweetgum, sycamore, yellow poplar, loblolly pine, willow oak, black willow, American holly, sweetbay, Japanese honeysuckle, cross vine, cane, woodland sedge  |   |  |   |   |
| Aquatic Habitats <i>(ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools)</i> :<br>Pools, coarse woody debris, wrack piles, leaf packs  |   |  |   |   |
| Aquatic Organisms Observed <i>(list)</i> :<br>Minnows, frog   |   |  |   |   |
| T&E Species Observed <i>(list)</i> :<br>none  |   |  |   |   |
| Disturbances <i>(ex: livestock access, manure in waterbody, waste discharge pipes)</i> :<br>Run-off and sediment load from agricultural fields, culvert crossing for dirt road (access road 71b)  |   |  |   |   |
| Tributary is:<br><i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |   |  |   |   |
| Stream Quality <sup>a</sup> :<br><i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |   |  |   |   |



Waterbody ID:

ssua004

<sup>a</sup> **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

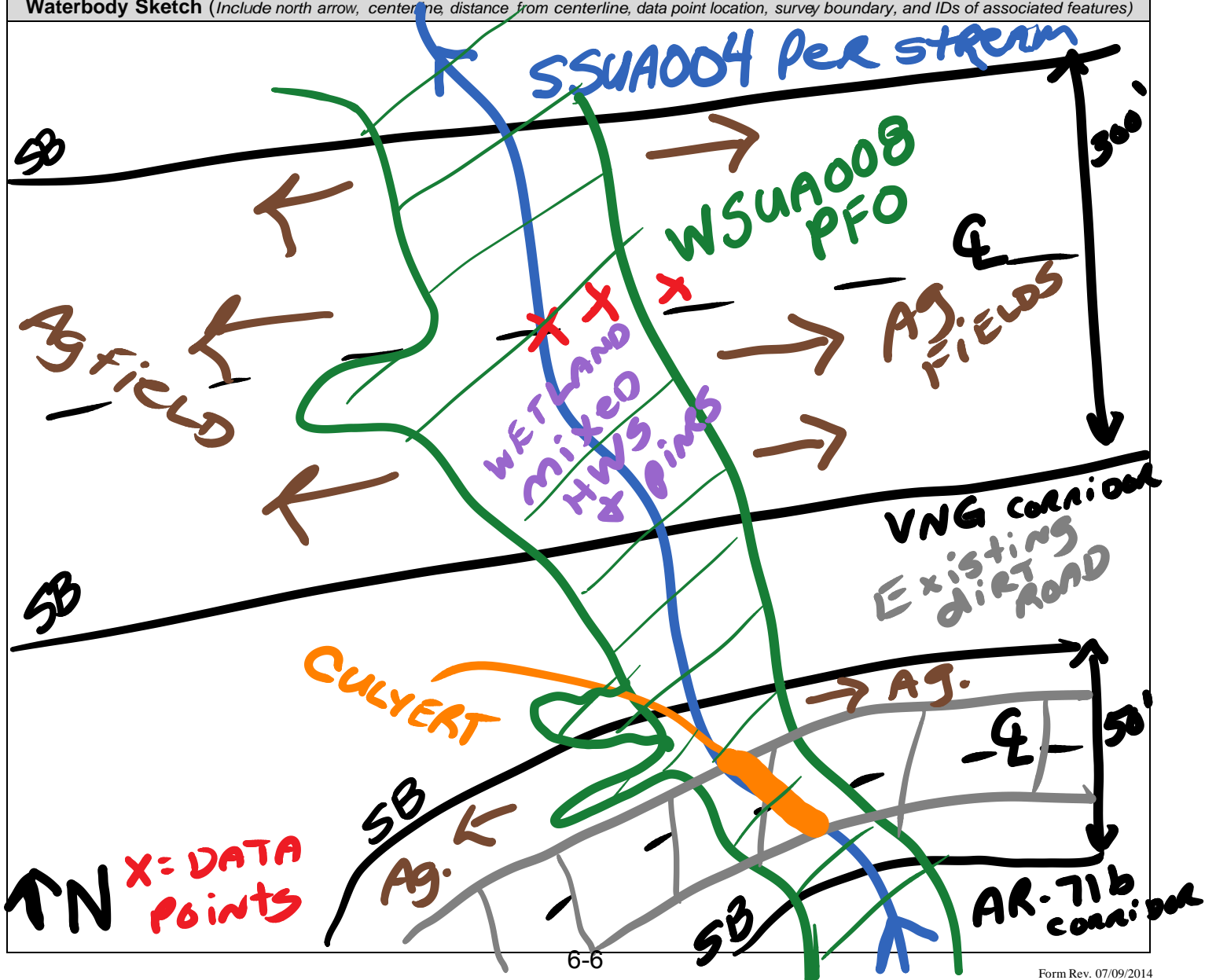
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

Stream continues out of VNG lateral corridor and access road 71b corridors in both directions; flows through PFO wetland wsua008; culvert crossing for existing dirt road.

**Waterbody Sketch** (Include north arrow, center line, distance from centerline, data point location, survey boundary, and IDs of associated features)





Waterbody SSUA004 facing north downstream



Waterbody SSUA004 facing south upstream



Waterbody SSUA004 facing west across



Ditch point DSUA001 facing north

# Linear Waterbody Data Sheet

| Survey Description  |   |   |   |   |
|---|---|---|---|---|
| Project Name:<br>Atlantic Coast Pipeline  |   | Waterbody Name:<br>UNT to Blackwater River  |   | Waterbody ID:<br>ssua005                            |
| Date:<br>12/10/2014   |   |   |   |   |
| State:<br>Virginia  | County:<br>Suffolk  | Company:<br>NRG   | Crew Member Initials:<br>GB, RL                 | Photos:<br>3 photos                                 |
| Tract Number(s):<br>26-007; 26-009  |   | Nearest Milepost:<br>38.05  | Associated Wetland ID(s):<br>NONE               |   |
| Survey Type:<br><i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |   |   |   |   |
| Physical Attributes   |   |   |   |   |
| Stream Classification:<br><i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial   |   |   |   |   |
| Waterbody Type:<br><i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |   |   |   |   |
| OHWM Width:<br>3.0 ft.  |   | OHWM Indicator:<br><i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining   |   |   |
| OHWM Height:<br>0.50 ft.  |   | <input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change |   |   |
| N/A <input type="checkbox"/>  |   |   |   |   |
| Width of Waterbody - Top of Bank to Top of Bank:<br>7.0 ft.   | Width of Waterbody - Toe of Slope to Toe of Slope:<br>2.0 ft. | Width of Waterbody - Water Edge to Water Edge:<br>2.5 ft.   | Depth of Water:<br><i>(Approx.)</i><br>0.25 ft. |   |
| N/A <input type="checkbox"/>  |   | N/A <input type="checkbox"/>  |   |   |
| Sinuosity:<br><i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering   |   | Water velocity:<br><i>(Approx.)</i><br>0.33 fps   |   | Bank slope<br>Right: 60 degrees<br>Left: 60 degrees |
| N/A <input type="checkbox"/>  |   | N/A <input type="checkbox"/>  |   |   |
| Qualitative Attributes  |   |   |   |   |
| Water Appearance:<br><i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:   |   |   |   |   |
| Substrate:<br><i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: |   |   |   |   |
| % of Substrate:      _____%      _____%      _____%      _____%      35%      55%      10%      _____%  |   |   |   |   |
| Width of Riparian Zone:<br>_____ ft.  |   | Vegetative Layers:<br><i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs   |   |   |
| N/A <input checked="" type="checkbox"/>   |   | Avg. DBH of Dominants:<br><i>(approx.)</i> 13.0 in.      1.5 in.  |   |   |
| Dominant Bank Vegetation <i>(list)</i> :<br>Sweetgum, red maple, loblolly pine, beech, water oak, sweet bay, Japanese honeysuckle, greenbrier, cane, panic grass  |   |   |   |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>Leaf packs, small wrack piles  |   |   |   |   |
| Aquatic Organisms Observed <i>(list)</i> :<br>none  |   |   |   |   |
| T&E Species Observed <i>(list)</i> :<br>none  |   |   |   |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>Agricultural run-off, clear cut upstream  |   |   |   |   |
| Tributary is:<br><i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |   |   |   |   |
| Stream Quality <sup>a</sup> :<br><i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |   |   |   |   |

<sup>a</sup> **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

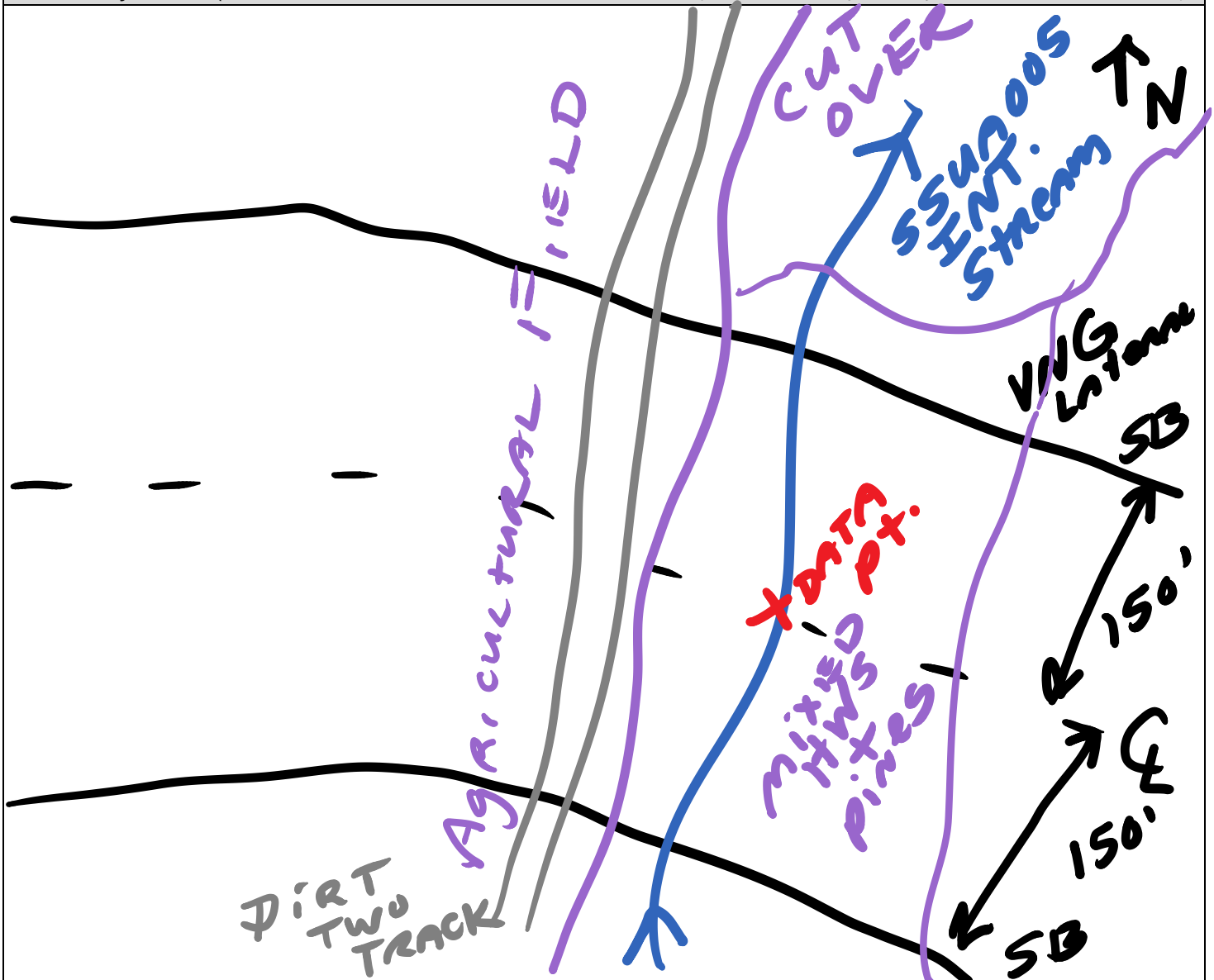
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

Continues out of corridor in both directions. Parallels agricultural field in a strip of mixed hardwoods and pines.

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)





Waterbody SSUA005 facing north downstream



Waterbody SSUA005 facing south upstream



Waterbody SSUA005 facing west across



# Linear Waterbody Data Sheet

| Survey Description  |   |  |   |
|---|---|--|---|
| Project Name:<br>Atlantic Coast Pipeline  |   | Waterbody Name:<br>UNT to Blackwater River   |   |
| Waterbody ID:<br>ssua007  |   | Date:<br>12/10/2014  |   |
| State:<br>Virginia  | County:<br>Suffolk  | Company:<br>NRG  | Crew Member Initials:<br>GB, RL                 |
| Photos:<br>3 photos   |   |  |   |
| Tract Number(s):<br>26-012  |   | Nearest Milepost:<br>38.5  | Associated Wetland ID(s):<br>wsua010            |
| Survey Type:<br><i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |   |  |   |
| Physical Attributes   |   |  |   |
| Stream Classification:<br><i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |   |  |   |
| Waterbody Type:<br><i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |   |  |   |
| OHWM Width:<br>5.0 ft.  |   | OHWM Indicator:<br><i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining              |   |
| Height:<br>1.5 ft.  |   | <input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change |   |
| N/A <input type="checkbox"/>  |   |  |   |
| Width of Waterbody - Top of Bank to Top of Bank:<br>6.0 ft.   | Width of Waterbody - Toe of Slope to Toe of Slope:<br>4.0 ft. | Width of Waterbody - Water Edge to Water Edge:<br>4.5 ft.  | Depth of Water:<br><i>(Approx.)</i><br>0.75 ft. |
| N/A <input type="checkbox"/>  |   | N/A <input type="checkbox"/>   |   |
| Sinuosity:<br><i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   |   | Water velocity:<br><i>(Approx.)</i><br>0.33 fps  |   |
| N/A <input type="checkbox"/>  |   | N/A <input type="checkbox"/>   |   |
| Bank height<br>Right: 2.0 ft.<br>Left: 2.0 ft.  |   | Bank slope<br>Right: 90 degrees<br>Left: 70 degrees  |   |
| Qualitative Attributes  |   |  |   |
| Water Appearance:<br><i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:   |   |  |   |
| Substrate:<br><i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: |   |  |   |
| % of Substrate:      _____%      _____%      _____%      _____%      55%      40%      5%      _____%   |   |  |   |
| Width of Riparian Zone:<br>90.0 ft.   |   | Vegetative Layers:<br><i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs  |   |
| N/A <input type="checkbox"/>  |   | Avg. DBH of Dominants:<br><i>(approx.)</i> 15.0 in.      1.5 in.   |   |
| Dominant Bank Vegetation <i>(list)</i> :<br>Black gum, yellow poplar, loblolly pine, sweetgum, sweet bay, American holly, cane, netted chain fern   |   |  |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>Pools, leaf packs, wrack piles   |   |  |   |
| Aquatic Organisms Observed <i>(list)</i> :<br>minnows, crayfish   |   |  |   |
| T&E Species Observed <i>(list)</i> :<br>none  |   |  |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>None apparent   |   |  |   |
| Tributary is:<br><i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |   |  |   |
| Stream Quality <sup>a</sup> :<br><i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |   |  |   |

Waterbody ID:

ssua007

<sup>a</sup> **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

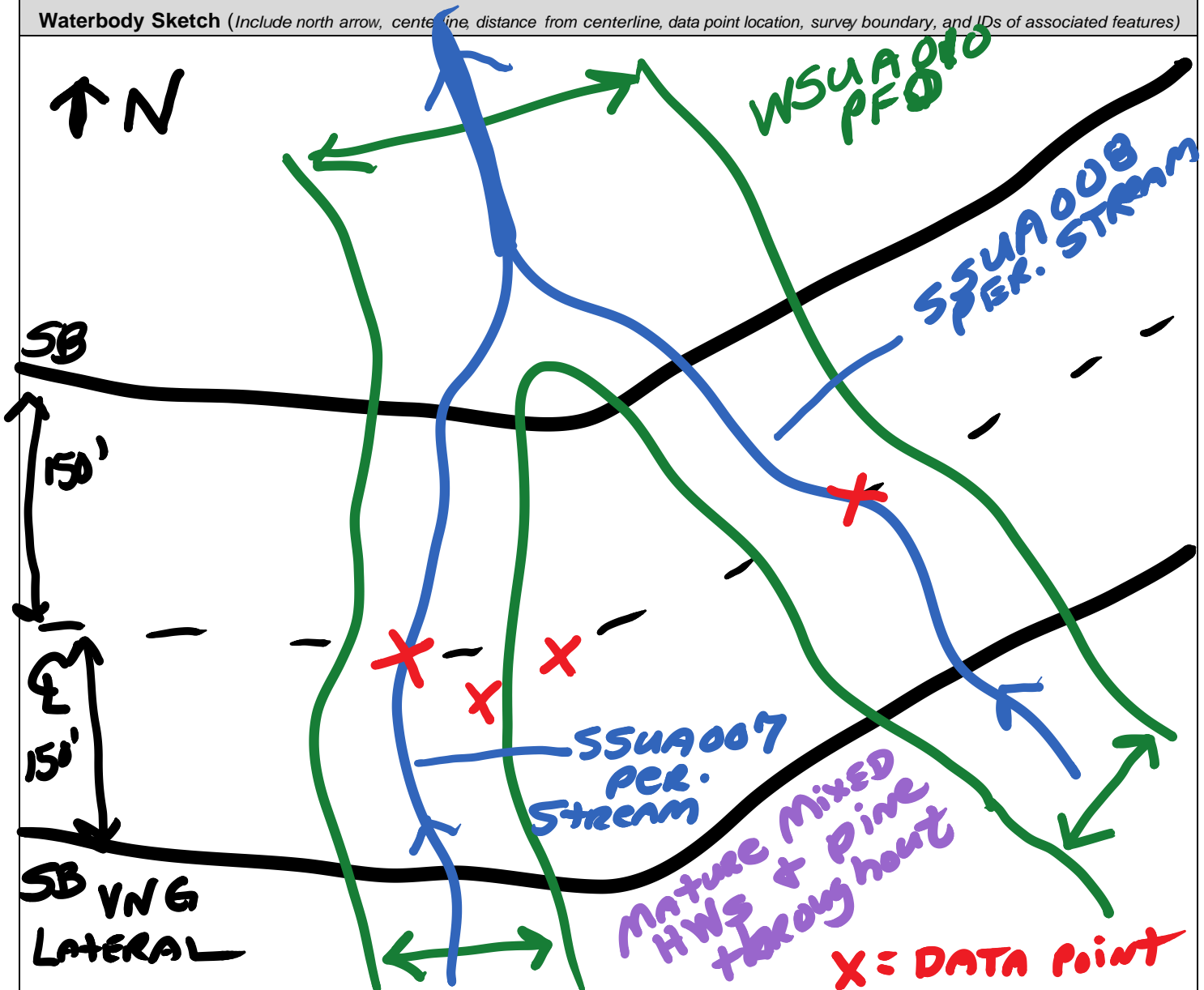
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

Continues out of corridor in both directions, flows into ssua008 north of corridor, flows through PFO wetland wsua010.

**Waterbody Sketch** (Include north arrow, center line, distance from centerline, data point location, survey boundary, and IDs of associated features)





Waterbody SSUA007 facing north downstream



Waterbody SSUA007 facing south upstream



Waterbody SSUA007 facing west across

# Linear Waterbody Data Sheet

| Survey Description  |   |   |  |   |
|---|---|---|--|---|
| Project Name:<br>Atlantic Coast Pipeline  |   | Waterbody Name:<br>UNT to Blackwater River  |  | Waterbody ID:<br>ssua008                            |
| Date:<br>12/10/2014   |   |   |  |   |
| State:<br>Virginia  | County:<br>Suffolk  | Company:<br>NRG   | Crew Member Initials:<br>GB, RL                | Photos:<br>3 photos                                 |
| Tract Number(s):<br>26-012  |   | Nearest Milepost:<br>38.55  | Associated Wetland ID(s):<br>wsua010           |   |
| Survey Type:<br><i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |   |   |  |   |
| Physical Attributes   |   |   |  |   |
| Stream Classification:<br><i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |   |   |  |   |
| Waterbody Type:<br><i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |   |   |  |   |
| OHWM Width:<br>6.0 ft.  |   | OHWM Indicator:<br><i>(check all that apply)</i>  |  |   |
| Height:<br>1.5 ft.  |   | <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining<br><input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change |  |   |
| N/A <input type="checkbox"/>  |   |   |  |   |
| Width of Waterbody - Top of Bank to Top of Bank:<br>7.0 ft.   | Width of Waterbody - Toe of Slope to Toe of Slope:<br>4.5 ft. | Width of Waterbody - Water Edge to Water Edge:<br>5.5 ft.   | Depth of Water:<br><i>(Approx.)</i><br>1.0 ft. |   |
| N/A <input type="checkbox"/>  |   | N/A <input type="checkbox"/>  |  |   |
| Sinuosity:<br><i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   |   | Water velocity:<br><i>(Approx.)</i><br>0.25 fps   |  | Bank slope<br>Right: 60 degrees<br>Left: 70 degrees |
| N/A <input type="checkbox"/>  |   | N/A <input type="checkbox"/>  |  |   |
| Qualitative Attributes  |   |   |  |   |
| Water Appearance:<br><i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:   |   |   |  |   |
| Substrate:<br><i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: |   |   |  |   |
| % of Substrate:      _____%      _____%      _____%      _____%      40%      50%      10%      _____%  |   |   |  |   |
| Width of Riparian Zone:<br>120.0 ft.  |   | Vegetative Layers:<br><i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs   |  |   |
| N/A <input type="checkbox"/>  |   | Avg. DBH of Dominants:<br><i>(approx.)</i> 15.0 in.      1.5 in.  |  |   |
| Dominant Bank Vegetation <i>(list)</i> :<br>Black gum, yellow poplar, loblolly pine, sweetgum, sweetbay, American holly, cane, netted chain fern, greenbrier  |   |   |  |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>Pools, leaf packs, wrack piles, coarse woody debris across channel   |   |   |  |   |
| Aquatic Organisms Observed <i>(list)</i> :<br>minnows   |   |   |  |   |
| T&E Species Observed <i>(list)</i> :<br>none  |   |   |  |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>None apparent   |   |   |  |   |
| Tributary is:<br><i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |   |   |  |   |
| Stream Quality <sup>a</sup> :<br><i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |   |   |  |   |

Waterbody ID:

ssua008

<sup>a</sup> **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

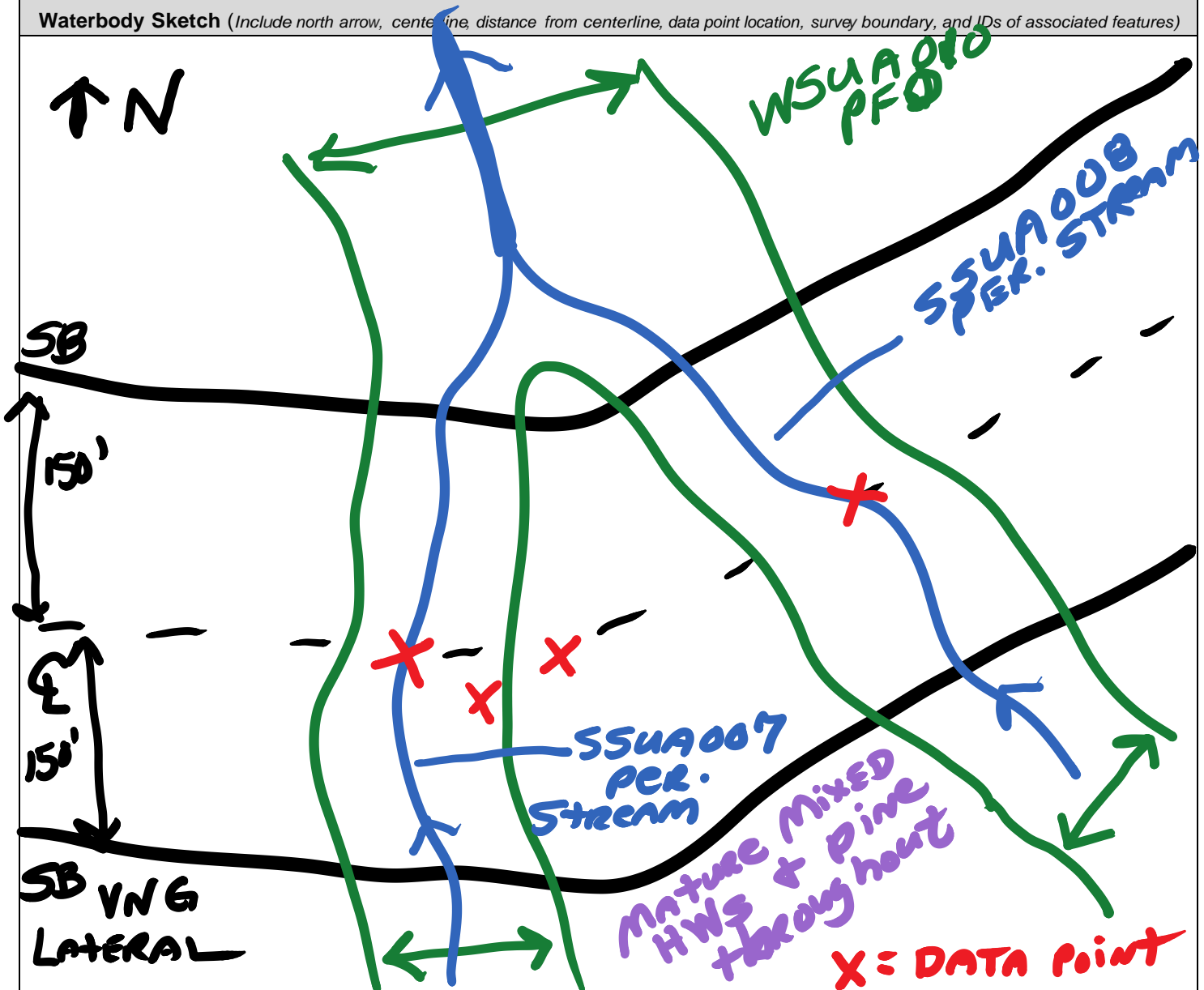
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

Continues out of corridor in both directions, ssua007 is a tributary north of corridor, flows through PFO wetland wsua010.

**Waterbody Sketch** (Include north arrow, center line, distance from centerline, data point location, survey boundary, and IDs of associated features)





Waterbody SSUA008 facing northwest downstream



Waterbody SSUA008 facing southeast upstream



Waterbody SSUA008 facing northeast across





Ditch data point DSUC053 facing southeast

# Linear Waterbody Data Sheet

## Survey Description

|                                  |  |   |  |                                  |  |   |  |
|----------------------------------|--|---|--|----------------------------------|--|---|--|
| Project Name:<br><u>ACP</u>      |  | Waterbody Name:<br><u>UNT to Blackwater River</u>   |  | Waterbody ID:<br><u>SSU0111</u>  |  | Date:<br><u>3/29/16</u>                     |  |
| State:<br><u>VA</u>              |  | County/Parish:<br><u>Suffolk</u>                    |  | Company:<br><u>ESI</u>           |  | Crew Member Initials:<br><u>LR, SB</u>      |  |
| Photos:<br><u>Facing E, W, N</u> |  | Tract Number(s):<br><u>26-013-A002, 26-013-A003</u> |  | Nearest Milepost:<br><u>41.5</u> |  | Associated Wetland ID(s):<br><u>WSU0037</u> |  |

Survey Type: (check one)  Centerline  Re-Route  Access Road  Other:

## Physical Attributes

Stream Classification: (check one)  Ephemeral  Intermittent  Perennial

Waterbody Type: (check one)  River  Stream  Ditch  Canal  Other:

|                             |   |   |                                     |   |  |   |
|-----------------------------|---|---|-------------------------------------|---|--|---|
| OHWM Width:<br><u>3</u> ft. | OHWM Indicator:<br>(check all that apply) | <input checked="" type="checkbox"/> Clear line on bank                  | <input type="checkbox"/> Shelving   | <input type="checkbox"/> Wrested vegetation | <input type="checkbox"/> Scouring                      | <input type="checkbox"/> Water staining             |
|                             |   | <input checked="" type="checkbox"/> Bent, matted, or missing vegetation | <input type="checkbox"/> Wrack line | <input type="checkbox"/> Litter and debris  | <input type="checkbox"/> Abrupt plant community change | <input type="checkbox"/> Soil characteristic change |

|  |  |   |   |
|--|--|---|---|
| Width of Waterbody - Top of Bank to Top of Bank:<br><u>5</u> ft. | Width of Waterbody - Toe of Slope to Toe of Slope:<br><u>3</u> ft. | Width of Waterbody - Water Edge to Water Edge:<br>N/A <input type="checkbox"/> <u>3</u> ft. | Depth of Water:<br>(Approx.)<br>N/A <input type="checkbox"/> <u>1.5</u> ft. |
|--|--|---|---|

|   |   |  |   |
|---|---|--|---|
| Sinuosity: (check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering | Water velocity: (Approx.)<br><u>&lt;1</u> fps<br>N/A <input type="checkbox"/> | Bank height<br>Right: <u>3</u> ft.<br>Left: <u>3</u> ft. | Bank slope<br>Right: <u>90</u> degrees<br>Left: <u>70</u> degrees |
|---|---|--|---|

## Qualitative Attributes

Water Appearance: (check one)  No water  Clear  Turbid  Sheen on surface  Surface scum  Algal mats  Other:

Substrate: (check all that apply)  Bedrock  Boulder  Cobble  Gravel  Sand  Silt/clay  Organic  Other:  
% of Substrate: \_\_\_\_\_% \_\_\_\_\_% \_\_\_\_\_% \_\_\_\_\_% \_\_\_\_\_% 100% \_\_\_\_\_% \_\_\_\_\_%

|   |  |  |  |  |
|---|--|--|--|--|
| Width of Riparian Zone:<br>N/A <input type="checkbox"/> <u>40</u> ft. | Vegetative Layers:<br>(check all that apply) | <input checked="" type="checkbox"/> Trees:<br>Avg. DBH of Dominants:<br>(approx.) <u>9</u> in. | <input checked="" type="checkbox"/> Saplings/Shrubs:<br><u>2</u> in. | <input checked="" type="checkbox"/> Herbs<br><u>NA</u> in. |
|---|--|--|--|--|

Dominant Bank Vegetation (list):  
Ilex opaca, Carpinus caroliniana

Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):  
deep pools, riffles, submerged roots/wood

Aquatic Organisms Observed (list):  
none observed

T&E Species Observed (list):  
none observed

Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):  
none

Tributary is: (check one)  Natural  Artificial, man-made  Manipulated

Stream Quality \*: (check one)  High  Moderate  Low

Waterbody ID:

SSU0111

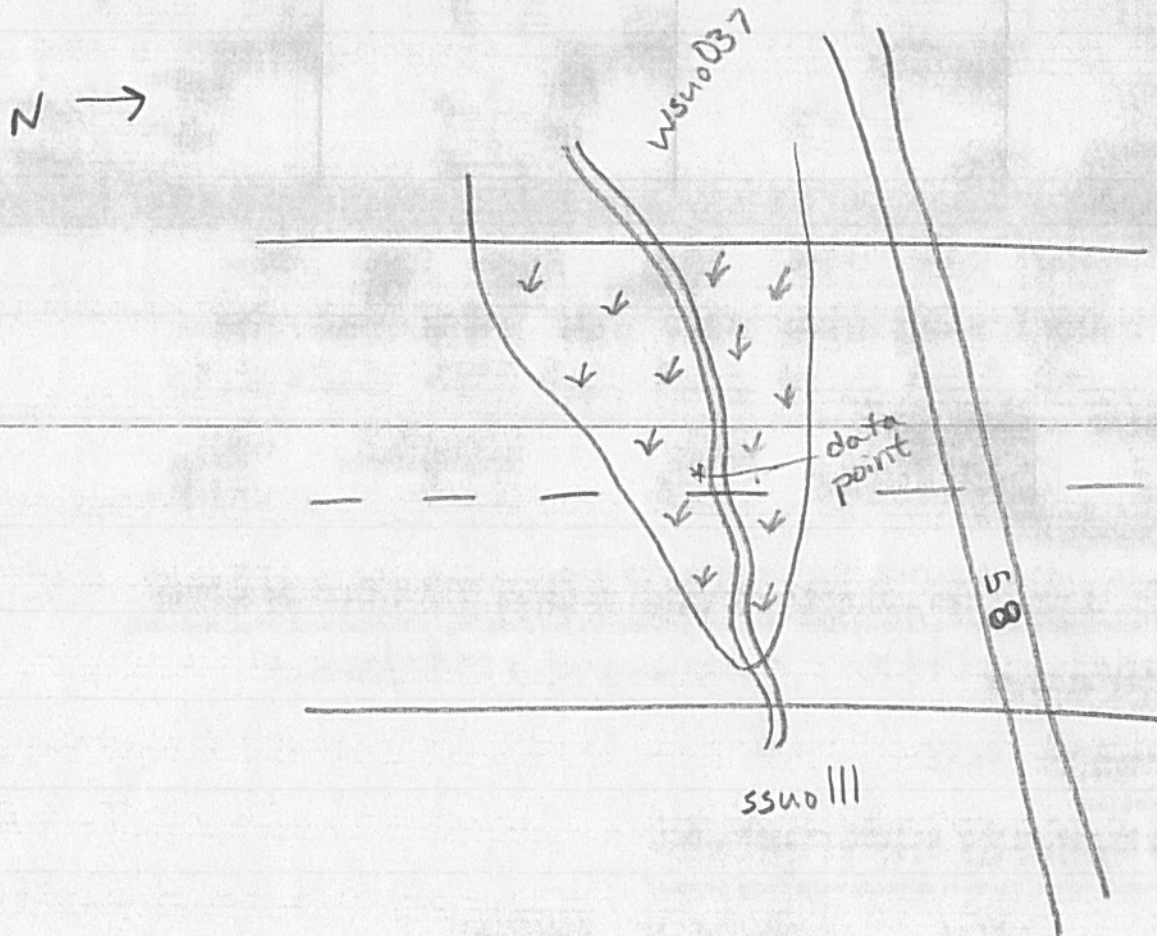
• **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots, water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssu0111 facing east upstream.**



**Waterbody data point ssu0111 facing west downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo111 facing north across.**

# Linear Waterbody Data Sheet

| Survey Description  |   |  |  |                          |
|---|---|--|--|--------------------------|
| Project Name:<br>Atlantic Coast Pipeline  |   | Waterbody Name:<br>UNT to Blackwater River   |  | Waterbody ID:<br>ssua071 |
| Date:<br>9/16/2015  |   |  |  |                          |
| State:<br>Virginia  | County:<br>Suffolk  | Company:<br>NRG  | Crew Member Initials:<br>GB, SA                | Photos:<br>3 photos      |
| Tract Number(s):<br>26-013-A003   |   | Nearest Milepost:<br>41.6  | Associated Wetland ID(s):<br>none              |                          |
| Survey Type:<br><i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:   |   |  |  |                          |
| Physical Attributes   |   |  |  |                          |
| Stream Classification:<br><i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial   |   |  |  |                          |
| Waterbody Type:<br><i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |   |  |  |                          |
| OHWM Width:<br>3.0 ft.  |   | OHWM Indicator:<br><i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining |  |                          |
| Height:<br>1.0 ft.  |   | <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change                     |  |                          |
| N/A <input type="checkbox"/>  |   |  |  |                          |
| Width of Waterbody - Top of Bank to Top of Bank:<br>4.0 ft.   | Width of Waterbody - Toe of Slope to Toe of Slope:<br>2.5 ft.   | Width of Waterbody - Water Edge to Water Edge:<br>N/A <input checked="" type="checkbox"/> _____ ft.  | Depth of Water:<br><i>(Approx.)</i> _____ ft.  |                          |
| Sinuosity:<br><i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering   |   | Water velocity:<br><i>(Approx.)</i> _____ fps  | Bank height<br>Right: 5.0 ft.<br>Left: 5.0 ft. |                          |
| N/A <input checked="" type="checkbox"/>   |   | Bank slope<br>Right: 90 degrees<br>Left: 90 degrees  |  |                          |
| Qualitative Attributes  |   |  |  |                          |
| Water Appearance:<br><i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:   |   |  |  |                          |
| Substrate:<br><i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: |   |  |  |                          |
| % of Substrate: _____%      _____%      _____%      _____%      75%      10%      15%      _____%   |   |  |  |                          |
| Width of Riparian Zone:<br>N/A <input checked="" type="checkbox"/> _____ ft.  | Vegetative Layers:<br><i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs |  |  |                          |
| Avg. DBH of Dominants:<br><i>(approx.)</i> 10.0 in.      1.0 in.  |   |  |  |                          |
| Dominant Bank Vegetation <i>(list)</i> :<br>Black walnut, sycamore, box elder, spicebush, asian dayflower, Japanese stiltgrass, pokeweed, dog-fennel, soybean, goldenrod, poison ivy, horseweed, ragweed, Japanese honeysuckle  |   |  |  |                          |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>none   |   |  |  |                          |
| Aquatic Organisms Observed <i>(list)</i> :<br>none  |   |  |  |                          |
| T&E Species Observed <i>(list)</i> :<br>none  |   |  |  |                          |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>Excessive run off from agricultural field has caused severe down cutting  |   |  |  |                          |
| Tributary is:<br><i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |   |  |  |                          |
| Stream Quality <sup>a</sup> :<br><i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low   |   |  |  |                          |

Waterbody ID:

ssua071

<sup>a</sup> **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

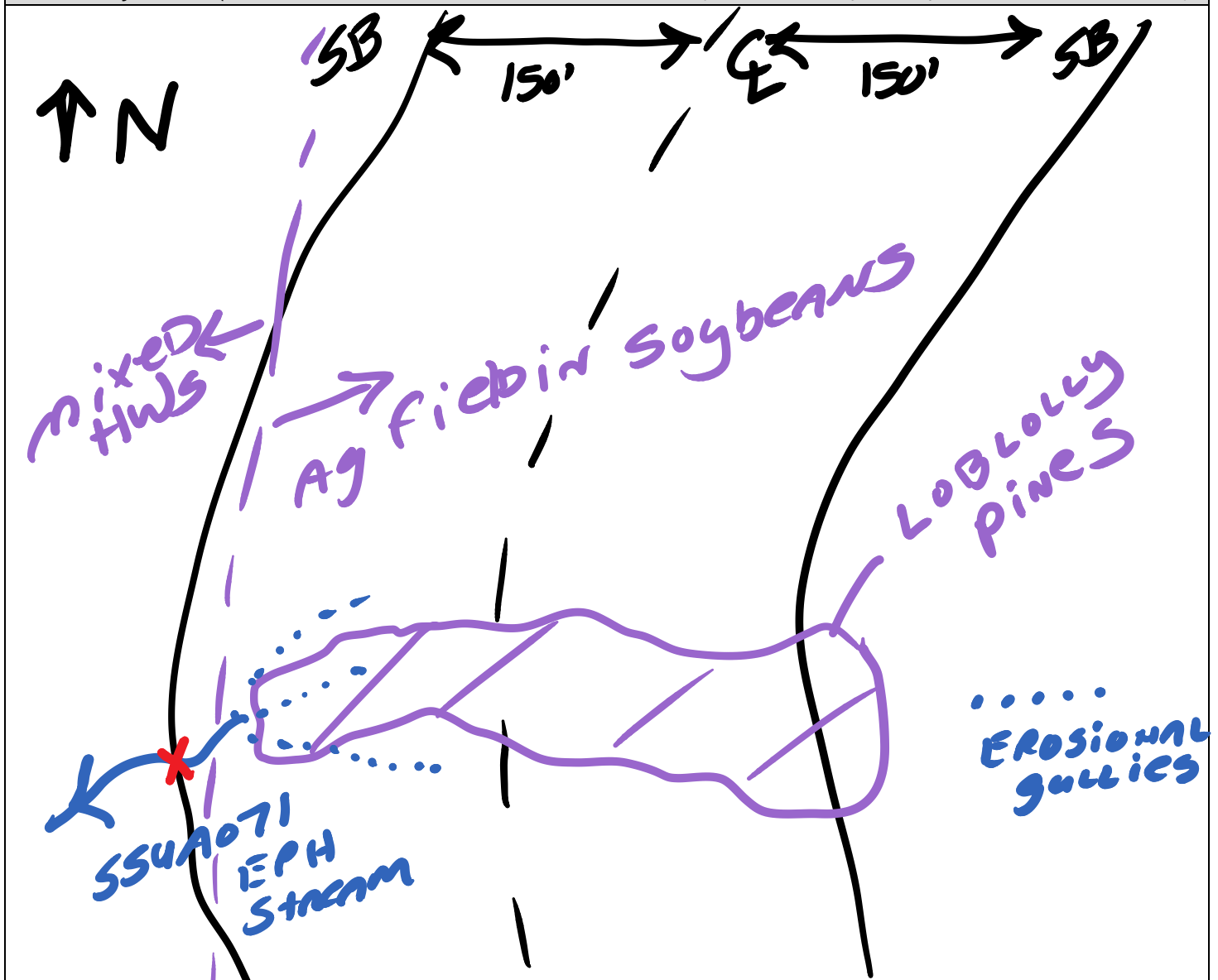
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

Begins near edge of agricultural field at head cut where several erosional gullies in a small stand of pines come together, downstream continues out of corridor. Channel is actively down cutting and has exposed many roots.

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)





Waterbody SSUA071 facing southeast upstream



Waterbody SSUA071 facing northwest downstream





Waterbody SSUA071 facing southwest across

# Linear Waterbody Data Sheet

| Survey Description   |  |   |   |                          |                  |
|--|--|---|---|--------------------------|------------------|
| Project Name:<br>Acp   |  | Waterbody Name:<br>VT to Blackwater River   |   | Waterbody ID:<br>SSUO007 | Date:<br>10/7/15 |
| State:<br>VA   | County/Parish:<br>Suffolk  | Company:<br>ESI   | Crew Member Initials:<br>JBenton  | Photos:<br>E, W, N       |                  |
| Tract Number(s):<br>26-013-A006, 26-013-A005   |  | Nearest Milepost:<br>42   | Associated Wetland ID(s):<br>WSUO013  |                          |                  |
| Survey Type:<br>(check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |  |   |   |                          |                  |
| Physical Attributes  |  |   |   |                          |                  |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |  |   |   |                          |                  |
| Waterbody Type:<br>(check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |  |   |   |                          |                  |
| OHWM<br>Width: <u>7</u> ft.<br>Height: <u>0.7</u> ft.<br>N/A <input type="checkbox"/>  |  | OHWM Indicator:<br>(check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change |   |                          |                  |
| Width of Waterbody - Top of Bank to Top of Bank:<br><u>8</u> ft.   | Width of Waterbody - Toe of Slope to Toe of Slope:<br><u>6.5</u> ft.   | Width of Waterbody - Water Edge to Water Edge:<br>N/A <input type="checkbox"/> <u>5</u> ft.   | Depth of Water:<br>(Approx.)<br>N/A <input type="checkbox"/> <u>0.5</u> ft. |                          |                  |
| Sinuosity:<br>(check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   | Water velocity:<br>(Approx.)<br><u>1</u> fps<br>N/A <input type="checkbox"/>   | Bank height<br>Right: <u>1</u> ft.<br>Left: <u>1</u> ft.  | Bank slope<br>Right: <u>70</u> degrees<br>Left: <u>70</u> degrees           |                          |                  |
| Qualitative Attributes   |  |   |   |                          |                  |
| Water Appearance:<br>(check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:   |  |   |   |                          |                  |
| Substrate:<br>(check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:<br>% of Substrate: _____% _____% _____% _____% <u>60</u> % <u>30</u> % <u>10</u> % _____% |  |   |   |                          |                  |
| Width of Riparian Zone:<br><u>500</u> ft.<br>N/A <input type="checkbox"/>  | Vegetative Layers:<br>(check all that apply) <input checked="" type="checkbox"/> Trees: <u>10</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>4</u> in. <input checked="" type="checkbox"/> Herbs: <u>N/A</u> in.<br>Avg. DBH of Dominants:<br>(approx.) |   |   |                          |                  |
| Dominant Bank Vegetation (list):<br><u>Acer rubrum, Carpinus caroliniana, Ilex opaca, Ligustrum sinese, Microstegium vimbrum</u>   |  |   |   |                          |                  |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br><u>overhanging banks, leaf packs, submerged wood + other debris.</u>  |  |   |   |                          |                  |
| Aquatic Organisms Observed (list):<br><u>aquatic worms, no EPT observed</u>  |  |   |   |                          |                  |
| T&E Species Observed (list):<br><u>none</u>  |  |   |   |                          |                  |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br><u>none</u>  |  |   |   |                          |                  |
| Tributary is:<br>(check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |  |   |   |                          |                  |
| Stream Quality*:<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low  |  |   |   |                          |                  |

Waterbody ID:

SSvo 007

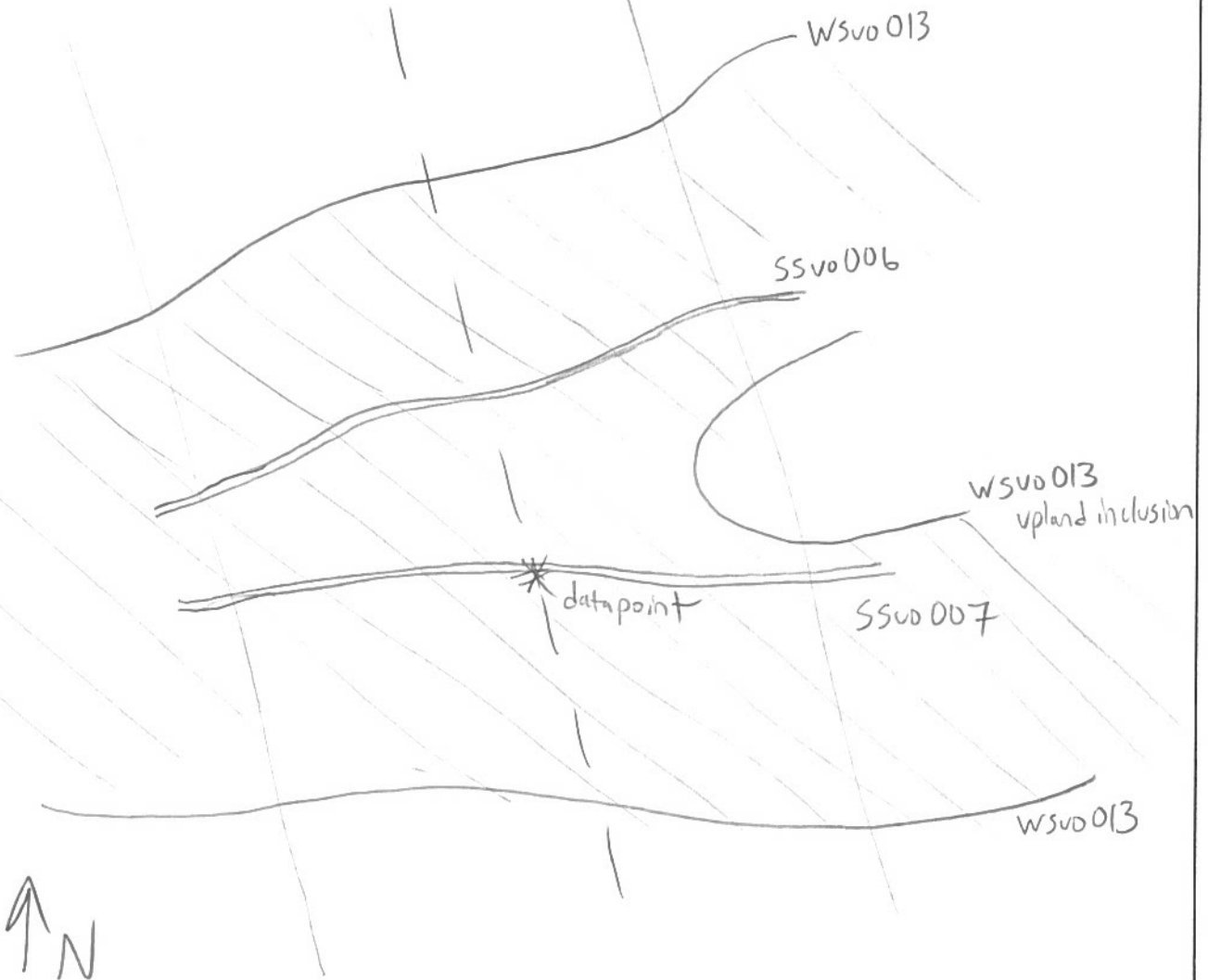
**High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssuo007 facing east upstream.**



**Waterbody ssuo007 facing west downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssuo007 facing north across bank.**

# Linear Waterbody Data Sheet

|  |   |  |   |
|--|---|--|---|
| <b>Survey Description</b>  |   |  |   |
| Project Name:<br>AcP   |   | Waterbody Name:<br>VT to Blackwater River  |   |
| Waterbody ID:<br>SSU0006   |   | Date:<br>10/7/15   |   |
| State:<br>VA   | County/Parish:<br>Suffolk                                   | Company:<br>ESI  | Crew Member Initials:<br>J Benton           |
| Photos:<br>NE, SW, NW  |   |  |   |
| Tract Number(s):<br>26-013-A006, 26-013-A007   |   | Nearest Milepost:<br>42  | Associated Wetland ID(s):<br>WSU0013        |
| Survey Type:<br>(check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |   |  |   |
| <b>Physical Attributes</b>   |   |  |   |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |   |  |   |
| Waterbody Type:<br>(check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |   |  |   |
| OHWM Width: 5 ft.  |   | OHWM Indicator:<br>(check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining                     |   |
| Height: 0.5 ft.  |   | <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change |   |
| N/A <input type="checkbox"/>   |   |  |   |
| Width of Waterbody - Top of Bank to Top of Bank:<br>6 ft.  | Width of Waterbody - Toe of Slope to Toe of Slope:<br>4 ft. | Width of Waterbody - Water Edge to Water Edge:<br>5 ft.  | Depth of Water:<br>(Approx.)<br>0.4 ft.     |
| Sinuosity:<br>(check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   |   | Water velocity:<br>(Approx.)<br>1 fps  | Bank height:<br>Right: 1 ft.<br>Left: 1 ft. |
| N/A <input type="checkbox"/>   |   | Bank slope:<br>Right: 50 degrees<br>Left: 50 degrees   |   |
| <b>Qualitative Attributes</b>  |   |  |   |
| Water Appearance:<br>(check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:   |   |  |   |
| Substrate:<br>(check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: |   |  |   |
| % of Substrate: _____% _____% _____% _____% 10% 60% 30% _____%   |   |  |   |
| Width of Riparian Zone:<br>500 ft.   |   | Vegetative Layers:<br>(check all that apply) <input checked="" type="checkbox"/> Trees: 6 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 3 in. <input checked="" type="checkbox"/> Herbs: N/A in.  |   |
| N/A <input type="checkbox"/>   |   | (approx.)  |   |
| Dominant Bank Vegetation (list):<br>Acer rubrum, Salix nigra, Microstegium vimineum, Impatiens capensis, Arundinaria gigantea  |   |  |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>submerged vegetation, submerged debris  |   |  |   |
| Aquatic Organisms Observed (list):<br>No EPT observed  |   |  |   |
| T&E Species Observed (list):<br>none   |   |  |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>impoundment in past  |   |  |   |
| Tributary is:<br>(check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |   |  |   |
| Stream Quality*:<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low  |   |  |   |

Waterbody ID:

SSV0006

**High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssuo006 facing northeast upstream.**



**Waterbody ssuo006 facing southwest downstream.**



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssuo006 facing northwest across bank.**

Linear Waterbody Data Sheet

|  |   |   |   |
|--|---|---|---|
| <b>Survey Description</b>  |   |   |   |
| Project Name:<br>ACP   | Waterbody Name:<br>LINTO Blackwater River   | Waterbody ID:<br>SSU0016  | Date:<br>22 Sept 2015   |
| State:<br>VA   | County/Parish:<br>Southampton<br>SUFFOLK  | Company:<br>ESI   | Crew Member Initials:<br>LKR, CSM   |
| Tract Number(s):<br>26-013-A009, 26-013-A008   |   | Nearest Milepost:<br>NA   | Photos:<br>S, N, W  |
| Associated Wetland ID(s):<br>WS00003   |   |   |   |
| Survey Type:<br>(check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |   |   |   |
| <b>Physical Attributes</b>   |   |   |   |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial   |   |   |   |
| Waterbody Type:<br>(check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |   |   |   |
| OHWM Width:<br>5 ft.   | OHWM Indicator:<br>(check all that apply)   | <input type="checkbox"/> Clear line on bank   | <input type="checkbox"/> Shelving   |
| Height:<br>1 ft.   | <input checked="" type="checkbox"/> Bent, matted, or missing vegetation           | <input type="checkbox"/> Wrack line   | <input type="checkbox"/> Litter and debris  |
| N/A <input type="checkbox"/>   |   | <input type="checkbox"/> Wrested vegetation   | <input type="checkbox"/> Scouring   |
|  |   | <input type="checkbox"/> Abrupt plant community change  | <input type="checkbox"/> Water staining   |
| Width of Waterbody - Top of Bank to Top of Bank:<br>5 ft.  | Width of Waterbody - Toe of Slope to Toe of Slope:<br>_____ ft.                   | Width of Waterbody - Water Edge to Water Edge:<br>N/A <input checked="" type="checkbox"/> _____ ft. | Depth of Water:<br>(Approx.)<br>N/A <input checked="" type="checkbox"/> _____ ft. |
| Sinuosity:<br>(check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   | Water velocity:<br>(Approx.)<br>N/A <input checked="" type="checkbox"/> _____ fps | Bank height<br>Right: 4 ft.<br>Left: 4 ft.  | Bank slope<br>Right: 90 degrees<br>Left: 90 degrees                               |
| <b>Qualitative Attributes</b>  |   |   |   |
| Water Appearance:<br>(check one) <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:                               |   |   |   |
| Substrate:<br>(check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: |   |   |   |
| % of Substrate: _____% _____% _____% _____% 20% 80% _____% _____%  |   |   |   |
| Width of Riparian Zone:<br>100 ft.   | Vegetative Layers:<br>(check all that apply)                                      | <input checked="" type="checkbox"/> Trees: 10 in.   | <input checked="" type="checkbox"/> Saplings/Shrubs: 3 in.                        |
| N/A <input type="checkbox"/>   | Avg. DBH of Dominants:<br>(approx.)   | <input checked="" type="checkbox"/> Herbs: NA in.   |   |
| Dominant Bank Vegetation (list):<br>Liriodendron tulipifera, Ilex opaca, Ligustrum sinense, Athrium asplenioides   |   |   |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>woody debris, overhanging banks   |   |   |   |
| Aquatic Organisms Observed (list):<br>None observed  |   |   |   |
| T&E Species Observed (list):<br>None observed  |   |   |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>None observed  |   |   |   |
| Tributary is:<br>(check one) <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated  |   |   |   |
| Stream Quality*:<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low  |   |   |   |

Waterbody ID:

SSUD016

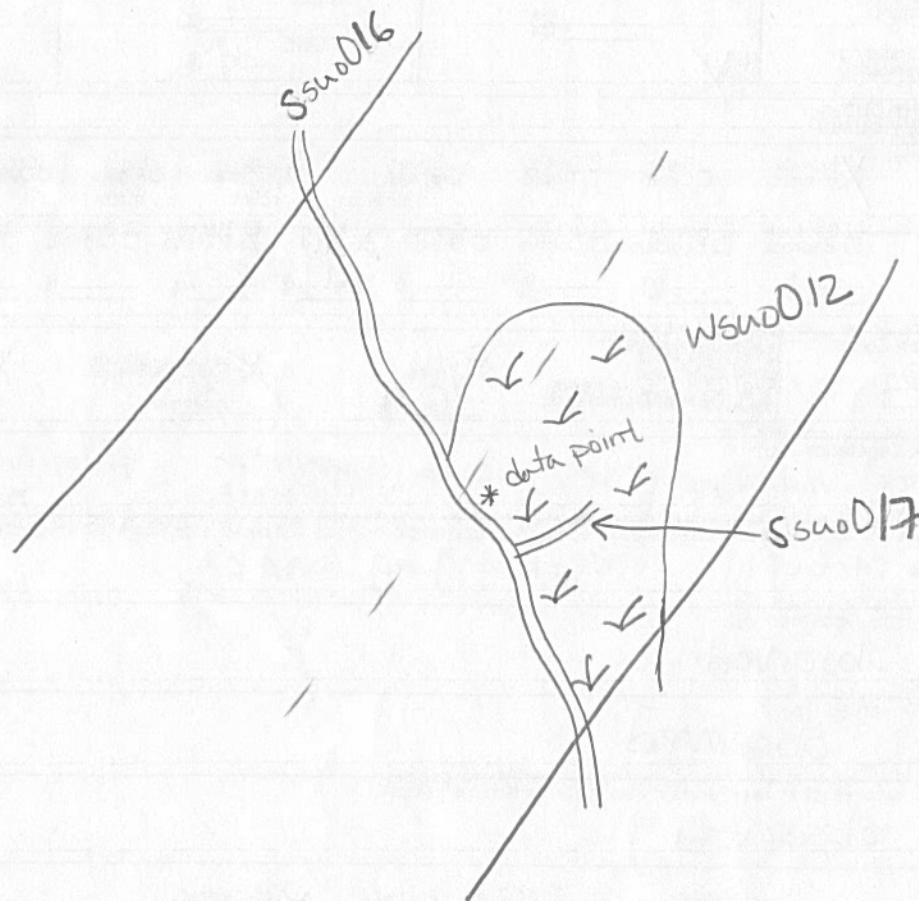
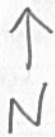
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssuo016 facing south upstream.**



**Waterbody ssuo016 facing north downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssuo016 facing west across bank.**

Linear Waterbody Data Sheet

|  |   |  |  |
|--|---|--|--|
| <b>Survey Description</b>  |   |  |  |
| Project Name:<br>ACP   | Waterbody Name:<br>UNTTO Blackwater River                               | Waterbody ID:<br>SSU0017                               | Date:<br>22 Sept 2015  |
| State:<br>VA   | County/Parish:<br>Suffolk   | Company:<br>ESI  | Crew Member Initials:<br>LKR, CSM                              |
| Tract Number(s):<br>26-D13-A009  |   | Nearest Milepost:<br>NA                                | Photos:<br>EWS   |
| Associated Wetland ID(s):<br>WS00 003  |   |  |  |
| Survey Type:<br>(check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |   |  |  |
| <b>Physical Attributes</b>   |   |  |  |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial   |   |  |  |
| Waterbody Type:<br>(check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |   |  |  |
| OHWM Width:<br>2 ft.   | OHWM Indicator:<br>(check all that apply)                               | <input type="checkbox"/> Clear line on bank            | <input type="checkbox"/> Shelving                              |
| OHWM Height:<br>0.5 ft.  | <input checked="" type="checkbox"/> Bent, matted, or missing vegetation | <input type="checkbox"/> Wrack line                    | <input type="checkbox"/> Litter and debris                     |
| N/A <input type="checkbox"/>   |   | <input type="checkbox"/> Wrested vegetation            | <input type="checkbox"/> Scouring                              |
|  |   | <input type="checkbox"/> Abrupt plant community change | <input checked="" type="checkbox"/> Soil characteristic change |
| Width of Waterbody - Top of Bank to Top of Bank:<br>4 ft.  | Width of Waterbody - Toe of Slope to Toe of Slope:<br>2 ft.             | Width of Waterbody - Water Edge to Water Edge:<br>N/A  | Depth of Water:<br>(Approx.)<br>0.1 ft.                        |
| Sinuosity:<br>(check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering   | Water velocity:<br>(Approx.)<br>0 fps                                   | Bank height<br>Right: 4 ft.<br>Left: 4 ft.             | Bank slope<br>Right: 90 degrees<br>Left: 90 degrees            |
| <b>Qualitative Attributes</b>  |   |  |  |
| Water Appearance:<br>(check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other: |   |  |  |
| Substrate:<br>(check all that apply)   |   |  |  |
| % of Substrate: _____% _____% _____% _____% <input checked="" type="checkbox"/> Sand 85% <input checked="" type="checkbox"/> Silt/clay 15% _____% _____%   |   |  |  |
| Width of Riparian Zone:<br>40 ft.  | Vegetative Layers:<br>(check all that apply)                            | <input checked="" type="checkbox"/> Trees: 5 in.       | <input checked="" type="checkbox"/> Saplings/Shrubs: 3 in.     |
| N/A <input type="checkbox"/>   | Avg. DEH of Dominants:<br>(approx.)                                     | <input checked="" type="checkbox"/> Herbs: NA in.      |  |
| Dominant Bank Vegetation (list):<br>Liriodendron tulipifera, Ligustrum sinense   |   |  |  |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>Leaf packs  |   |  |  |
| Aquatic Organisms Observed (list):<br>None observed  |   |  |  |
| T&E Species Observed (list):<br>None observed  |   |  |  |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>None observed  |   |  |  |
| Tributary is:<br>(check one) <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated  |   |  |  |
| Stream Quality *:<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |   |  |  |

Waterbody ID:

SSuo017

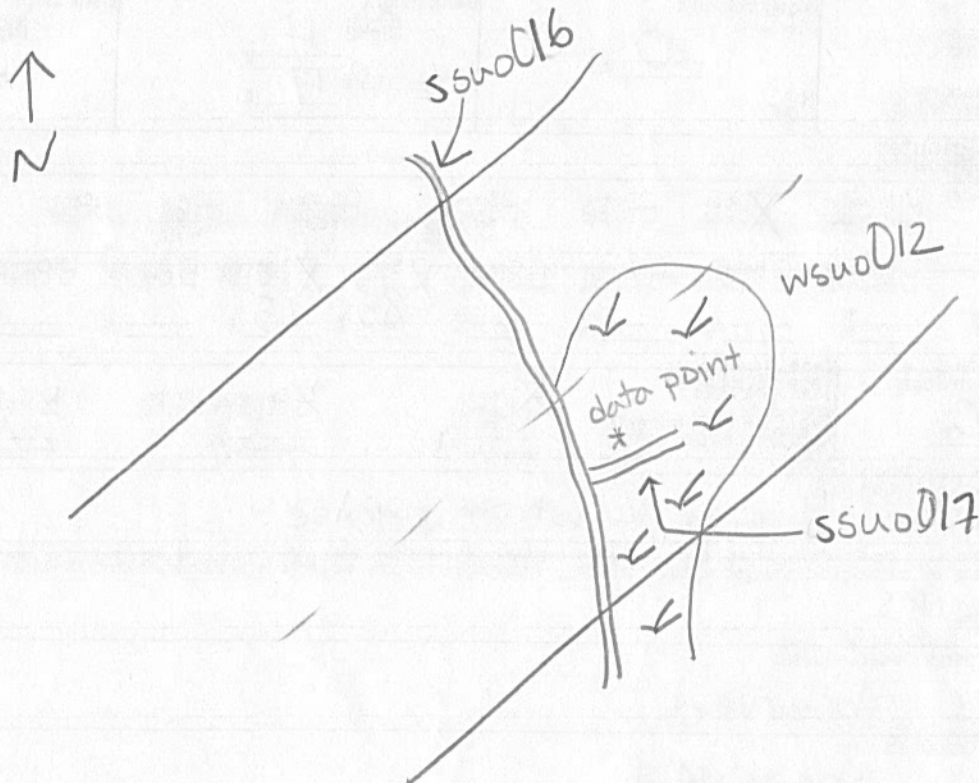
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssuo017 facing east upstream.**



**Waterbody ssuo017facing west downstream.**



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssuo017 facing north across bank.**

# Linear Waterbody Data Sheet

|  |  |   |  |  |
|--|--|---|--|--|
| <b>Survey Description</b>  |  |   |  |  |
| Project Name:<br>ACP   |  | Waterbody Name:<br>UNT to Kingsale Swamp                | Waterbody ID:<br>SSUP 015                            | Date:<br>12/9/15                                       |
| State:<br>VA   | County/Parish:<br>SUFFOLK                                    | Company:<br>ESI-1                                       | Crew Member Initials:<br>MKS, KSM                    | Photos:<br>Facing NE, SW, SE                           |
| Tract Number(s):<br>26-013-A025  |  | Nearest Milepost:<br>4.5                                | Associated Wetland ID(s):<br>WS4P025                 |  |
| Survey Type:<br>(check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |  |   |  |  |
| <b>Physical Attributes</b>   |  |   |  |  |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |  |   |  |  |
| Waterbody Type:<br>(check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |  |   |  |  |
| OHWM Width:<br>4 ft.   | OHWM Indicator:<br>(check all that apply)                    | <input checked="" type="checkbox"/> Clear line on bank  | <input type="checkbox"/> Shelving                    | <input checked="" type="checkbox"/> Wrested vegetation |
| OHWM Height:<br>4 ft.  | <input type="checkbox"/> Bent, matted, or missing vegetation | <input type="checkbox"/> Wrack line                     | <input type="checkbox"/> Litter and debris           | <input type="checkbox"/> Abrupt plant community change |
| N/A <input type="checkbox"/>   | <input type="checkbox"/> Scouring                            | <input checked="" type="checkbox"/> Water staining      | <input type="checkbox"/> Soil characteristic change  |  |
| Width of Waterbody - Top of Bank to Top of Bank:<br>6 ft.  | Width of Waterbody - Toe of Slope to Toe of Slope:<br>5 ft.  | Width of Waterbody - Water Edge to Water Edge:<br>4 ft. | Depth of Water:<br>(Approx.)<br>0.5 ft.              | N/A <input type="checkbox"/>                           |
| Sinuosity:<br>(check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   | Water velocity:<br>(Approx.)<br>0.5 fps                      | Bank height<br>Right: 2 ft.<br>Left: 4 ft.              | Bank slope<br>Right: 20 degrees<br>Left: 60 degrees  | N/A <input type="checkbox"/>                           |
| <b>Qualitative Attributes</b>  |  |   |  |  |
| Water Appearance:<br>(check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other: |  |   |  |  |
| Substrate:<br>(check all that apply)   |  |   |  |  |
| <input type="checkbox"/> Bedrock   | <input type="checkbox"/> Boulder                             | <input type="checkbox"/> Cobble                         | <input type="checkbox"/> Gravel                      | <input checked="" type="checkbox"/> Sand               |
| <input type="checkbox"/> % of Substrate: _____ %   | <input type="checkbox"/> % of Substrate: _____ %             | <input type="checkbox"/> % of Substrate: _____ %        | <input type="checkbox"/> % of Substrate: _____ %     | <input checked="" type="checkbox"/> Silt/clay          |
| <input type="checkbox"/> % of Substrate: _____ %   | <input type="checkbox"/> % of Substrate: _____ %             | <input type="checkbox"/> % of Substrate: _____ %        | <input type="checkbox"/> % of Substrate: _____ %     | <input type="checkbox"/> Organic                       |
| <input type="checkbox"/> % of Substrate: _____ %   | <input type="checkbox"/> % of Substrate: _____ %             | <input type="checkbox"/> % of Substrate: _____ %        | <input type="checkbox"/> % of Substrate: _____ %     | <input type="checkbox"/> Other:                        |
| Width of Riparian Zone:<br>50 ft.  | Vegetative Layers:<br>(check all that apply)                 | <input type="checkbox"/> Trees:                         | <input checked="" type="checkbox"/> Saplings/Shrubs: | <input checked="" type="checkbox"/> Herbs              |
| N/A <input type="checkbox"/>   | Avg. DBH of Dominants:<br>(approx.)                          | _____ in.   | 1 in.  | NA in.   |
| Dominant Bank Vegetation (list):<br>Polystichum acrostichoides, Ligustrum sinense, Lonicera japonica   |  |   |  |  |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>leaf packs, riffle/pools, submerged woody debris  |  |   |  |  |
| Aquatic Organisms Observed (list):<br>none   |  |   |  |  |
| T&E Species Observed (list):<br>none   |  |   |  |  |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>none   |  |   |  |  |
| Tributary is:<br>(check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |  |   |  |  |
| Stream Quality *:<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |  |   |  |  |

Waterbody ID:

SSAP 015

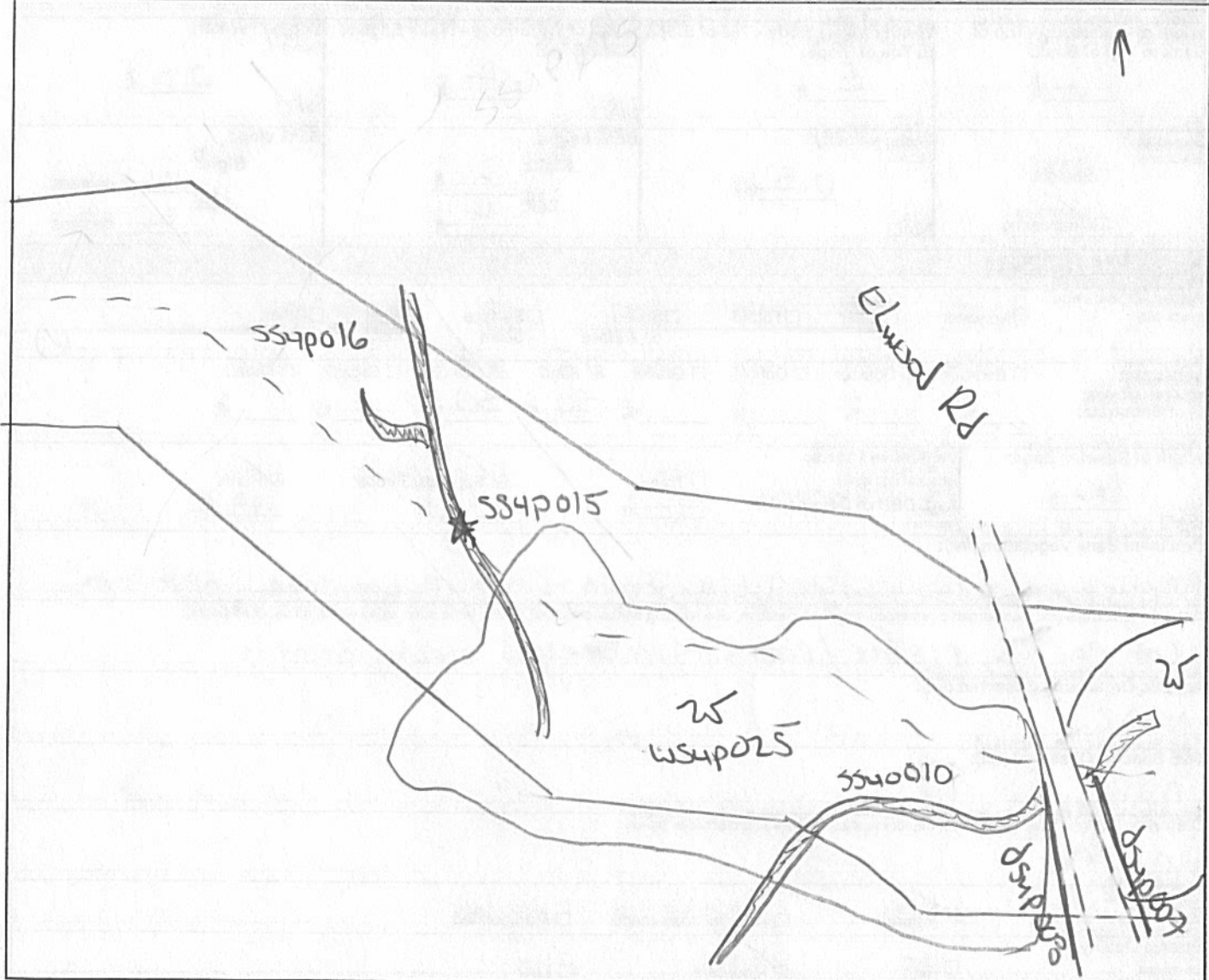
**High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssup015 facing northeast upstream.**



**Waterbody data point ssup015 facing southwest downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssup015 facing southeast across bank.**

**Linear Waterbody Data Sheet**

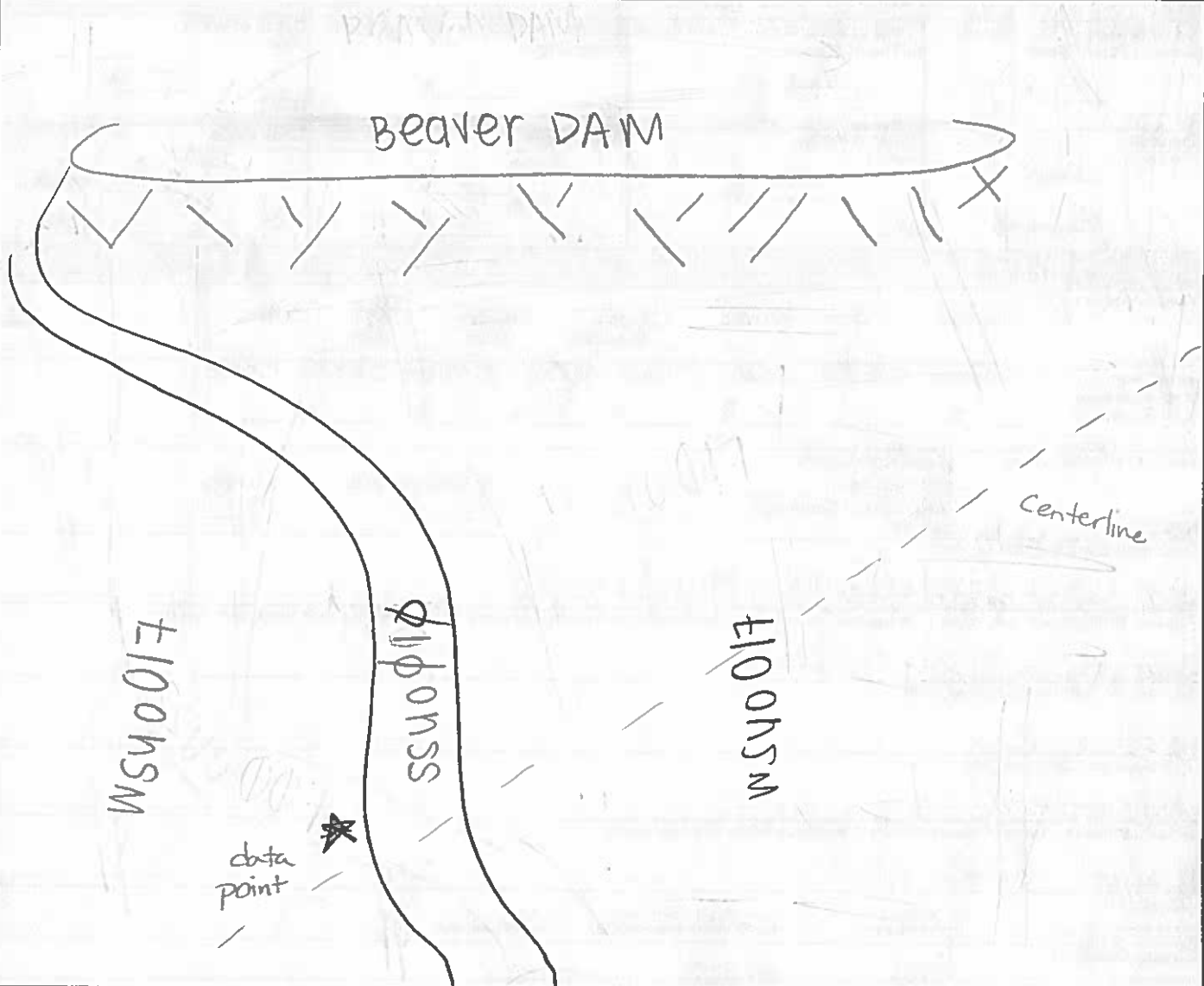
|  |   |   |  |  |
|--|---|---|--|--|
| <b>Survey Description</b>  |   |   |  |  |
| Project Name:<br>ACP   |   | Waterbody Name:<br>UNT to Kingpole Swamp                | Waterbody ID:<br>SSU0010                                   | Date:<br>11/03/15                                      |
| State:<br>VA   | County/Parish:<br>Suffolk   | Company:<br>ESI   | Crew Member Initials:<br>L.R., S.I                         | Photos:<br>SWE   |
| Tract Number(s):<br>26-013-A030  |   | Nearest Milepost:<br>44.5                               | Associated Wetland ID(s):<br>NSU0017                       |  |
| Survey Type:<br>(check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |   |   |  |  |
| <b>Physical Attributes</b>   |   |   |  |  |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |   |   |  |  |
| Waterbody Type:<br>(check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |   |   |  |  |
| OHWM Width:<br>5 ft.   | OHWM Indicator:<br>(check all that apply)                               | <input checked="" type="checkbox"/> Clear line on bank  | <input type="checkbox"/> Shelving                          | <input type="checkbox"/> Wrested vegetation            |
| OHWM Height:<br>2 ft.  | <input checked="" type="checkbox"/> Bent, matted, or missing vegetation | <input type="checkbox"/> Wrack line                     | <input checked="" type="checkbox"/> Litter and debris      | <input type="checkbox"/> Scouring                      |
| N/A <input type="checkbox"/>   |   |   |  | <input checked="" type="checkbox"/> Water staining     |
| N/A <input type="checkbox"/>   |   |   |  | <input type="checkbox"/> Abrupt plant community change |
| <input type="checkbox"/> Soil characteristic change  |   |   |  |  |
| Width of Waterbody - Top of Bank to Top of Bank:<br>5 ft.  | Width of Waterbody - Toe of Slope to Toe of Slope:<br>5 ft.             | Width of Waterbody - Water Edge to Water Edge:<br>5 ft. | Depth of Water:<br>(Approx.)<br>2 ft.                      |  |
| N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>  | N/A <input type="checkbox"/>                            | N/A <input type="checkbox"/>                               |  |
| Sinuosity:<br>(check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   | Water velocity:<br>(Approx.)<br>1 fps                                   | Bank height<br>Right: 2 ft.<br>Left: 2 ft.              | Bank slope<br>Right: 90 degrees<br>Left: 90 degrees        |  |
| N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>  |   |  |  |
| <b>Qualitative Attributes</b>  |   |   |  |  |
| Water Appearance:<br>(check one) <input type="checkbox"/> No water <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:                               |   |   |  |  |
| Substrate:<br>(check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: |   |   |  |  |
| % of Substrate: _____% _____% _____% _____% 90% 10% _____% _____%  |   |   |  |  |
| Width of Riparian Zone:<br>100 ft.   | Vegetative Layers:<br>(check all that apply)                            | <input checked="" type="checkbox"/> Trees: 6 in.        | <input checked="" type="checkbox"/> Saplings/Shrubs: 2 in. | <input checked="" type="checkbox"/> Herbs: N/A in.     |
| N/A <input type="checkbox"/>   | Avg. DBH of Dominants:<br>(approx.)                                     |   |  |  |
| Dominant Bank Vegetation (list):<br>Acer rubrum and smilax rotundifolia  |   |   |  |  |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>Deep pools, woody debris  |   |   |  |  |
| Aquatic Organisms Observed (list):<br>None   |   |   |  |  |
| T&E Species Observed (list):<br>None observed  |   |   |  |  |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>Culvert, beaver dam  |   |   |  |  |
| Tributary Is:<br>(check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |   |   |  |  |
| Stream Quality *:<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |   |   |  |  |

Waterbody ID:  
SSVD 010

- **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.
- Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.
- Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)**



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssuo010 facing east upstream.**



**Waterbody ssuo010 facing west downstream.**



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssuo010 facing south across bank.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point dsup007 facing southeast upstream.**



**Waterbody data point dsup007 facing northwest downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point dsup007 facing northeast across bank.**

**Linear Waterbody Data Sheet**

| Survey Description   |   |  |   |                          |
|--|---|--|---|--------------------------|
| Project Name:<br>ACP   |   | Waterbody Name:<br>UNT to Kingsale Swamp   |   | Waterbody ID:<br>SS40099 |
| Date:<br>10/21/15  |   |  |   |                          |
| State:<br>VA   | County/Parish:<br>Suffolk   | Company:<br>ESI  | Crew Member Initials:<br>L.R., S.I  | Photos:<br>N, S, E       |
| Tract Number(s):<br>26-013-A031,<br>26-013-A030, 26-013-A029   |   | Nearest Milepost:<br>NA  | Associated Wetland ID(s):<br>WS40016  |                          |
| Survey Type:<br>(check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |   |  |   |                          |
| Physical Attributes  |   |  |   |                          |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |   |  |   |                          |
| Waterbody Type:<br>(check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |   |  |   |                          |
| OHWM<br>Width: <u>6</u> ft.<br>Height: <u>0.5</u> ft.<br>N/A <input type="checkbox"/>  |   | OHWM Indicator:<br>(check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change |   |                          |
| Width of Waterbody - Top of Bank to Top of Bank:<br><u>7</u> ft.   | Width of Waterbody - Toe of Slope to Toe of Slope:<br><u>6</u> ft.  | Width of Waterbody - Water Edge to Water Edge:<br>N/A <input type="checkbox"/> <u>6</u> ft.  | Depth of Water:<br>(Approx.)<br>N/A <input type="checkbox"/> <u>0.5</u> ft. |                          |
| Sinuosity:<br>(check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   | Water velocity:<br>(Approx.)<br><u>0</u> fps<br>N/A <input type="checkbox"/>  | Bank height<br>Right: <u>2</u> ft.<br>Left: <u>2</u> ft.   | Bank slope<br>Right: <u>45</u> degrees<br>Left: <u>45</u> degrees           |                          |
| Qualitative Attributes   |   |  |   |                          |
| Water Appearance:<br>(check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:   |   |  |   |                          |
| Substrate:<br>(check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:<br>% of Substrate: _____% _____% _____% _____% _____% <u>100</u> % _____% _____% |   |  |   |                          |
| Width of Riparian Zone:<br><u>50</u> ft.<br>N/A <input type="checkbox"/>   | Vegetative Layers:<br>(check all that apply) <input checked="" type="checkbox"/> Trees: <u>6</u> in. <input type="checkbox"/> Saplings/Shrubs: _____ in. <input type="checkbox"/> Herbs: _____ in.<br>Avg. DBH of Dominants:<br>(approx.) |  |   |                          |
| Dominant Bank Vegetation (list):<br><u>Ilex opaca, Acer rubrum</u>   |   |  |   |                          |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br><u>overhanging banks/vegetation, woody debris, leaf pack</u>  |   |  |   |                          |
| Aquatic Organisms Observed (list):<br><u>Frogs</u>   |   |  |   |                          |
| T&E Species Observed (list):<br><u>None</u>  |   |  |   |                          |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br><u>None</u>  |   |  |   |                          |
| Tributary is:<br>(check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |   |  |   |                          |
| Stream Quality*:<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low  |   |  |   |                          |

Waterbody ID:

554009A

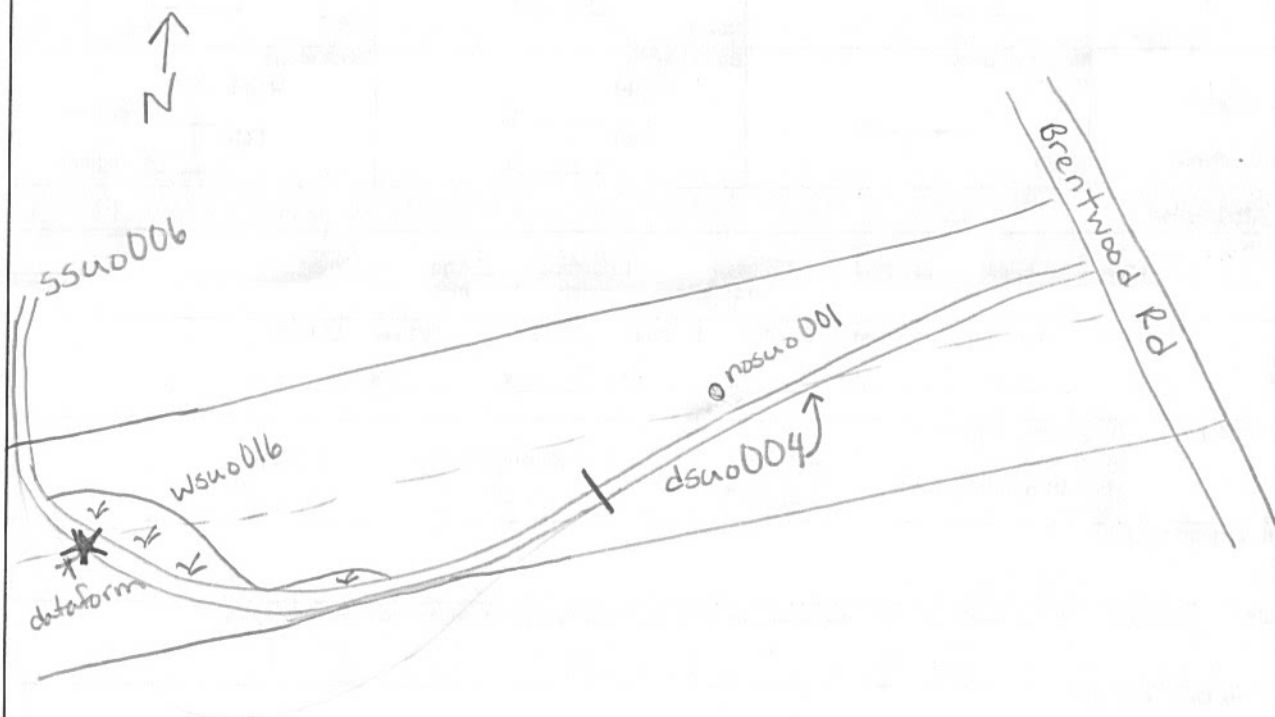
• **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssuo099 facing north upstream.**



**Waterbody ssuo099 facing south downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssuo099 facing east across bank.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody dsuo004 facing east upstream.**



**Waterbody dsuo004 facing west downstream.**



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody dsuo004 facing south across bank.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody dsuo003 facing west upstream.**



**Waterbody dsuo003 facing east downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody dsuo003 facing east across bank.**



Ditch data point dsua071 facing east



Ditch data point dsua072 facing south

**Linear Waterbody Data Sheet**

|  |   |  |  |                                 |
|--|---|--|--|---------------------------------|
| <b>Survey Description</b>  |   |  |  |                                 |
| Project Name:<br><u>ACP</u>  |   | Waterbody Name:<br><u>UNT to Kingsale Swamp</u>  |  | Waterbody ID:<br><u>SSUR007</u> |
| Date:<br><u>18 Jan 2016</u>  |   |  |  |                                 |
| State:<br><u>VA</u>  | County/Parish:<br><u>Suffolk</u>  | Company:<br><u>ESI</u>   | Crew Member Initials:<br><u>CAS, LSM</u>   | Photos:<br><u>SW NE SE</u>      |
| Tract Number(s):<br><u>26-044.3</u>  |   | Nearest Milepost:<br><u>46.1</u>   | Associated Wetland ID(s):<br><u>wsua 074</u>   |                                 |
| Survey Type:<br><small>(check one)</small> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:   |   |  |  |                                 |
| <b>Physical Attributes</b>   |   |  |  |                                 |
| Stream Classification:<br><small>(check one)</small> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial  |   |  |  |                                 |
| Waterbody Type:<br><small>(check one)</small> <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:  |   |  |  |                                 |
| OHWM<br>Width: <u>4</u> ft.<br>Height: <u>0.2</u> ft.<br>N/A <input type="checkbox"/>  |   | OHWM Indicator:<br><small>(check all that apply)</small><br><input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change |  |                                 |
| Width of Waterbody - Top of Bank to Top of Bank:<br><u>6</u> ft.   | Width of Waterbody - Toe of Slope to Toe of Slope:<br><u>4</u> ft.  | Width of Waterbody - Water Edge to Water Edge:<br>N/A <input type="checkbox"/> <u>3</u> ft.  | Depth of Water:<br><small>(Approx.)</small><br>N/A <input type="checkbox"/> <u>0.5</u> ft. |                                 |
| Sinuosity:<br><small>(check one)</small> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering  | Water velocity:<br><small>(Approx.)</small> <u>2</u> fps<br>N/A <input type="checkbox"/>  | Bank height<br>Right: <u>5</u> ft.<br>Left: <u>5</u> ft.   | Bank slope<br>Right: <u>85</u> degrees<br>Left: <u>85</u> degrees                          |                                 |
| <b>Qualitative Attributes</b>  |   |  |  |                                 |
| Water Appearance:<br><small>(check one)</small> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:  |   |  |  |                                 |
| Substrate:<br><small>(check all that apply)</small> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:<br>% of Substrate:    _____%    _____%    _____%    _____%    _____% <u>30</u> % <u>70</u> %    _____% |   |  |  |                                 |
| Width of Riparian Zone:<br>N/A <input type="checkbox"/> _____ ft.  | Vegetative Layers:<br><small>(check all that apply)</small><br>Avg. DBH of Dominants: _____ in. <input type="checkbox"/> Trees: _____ in. <input type="checkbox"/> Saplings/Shrubs: _____ in. <input checked="" type="checkbox"/> Herbs: <u>N/A</u> in. |  |  |                                 |
| Dominant Bank Vegetation (list):<br><u>Arundinaria gigantea, mowed herbs and saplings</u>  |   |  |  |                                 |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br><u>None</u>   |   |  |  |                                 |
| Aquatic Organisms Observed (list):<br><u>Crayfish</u>  |   |  |  |                                 |
| T&E Species Observed (list):<br><u>None</u>  |   |  |  |                                 |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br><u>mowed - maintained Agricultural Field</u>   |   |  |  |                                 |
| Tributary is:<br><small>(check one)</small> <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated   |   |  |  |                                 |
| Stream Quality *:<br><small>(check one)</small> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low  |   |  |  |                                 |

Waterbody ID:  
SSur007

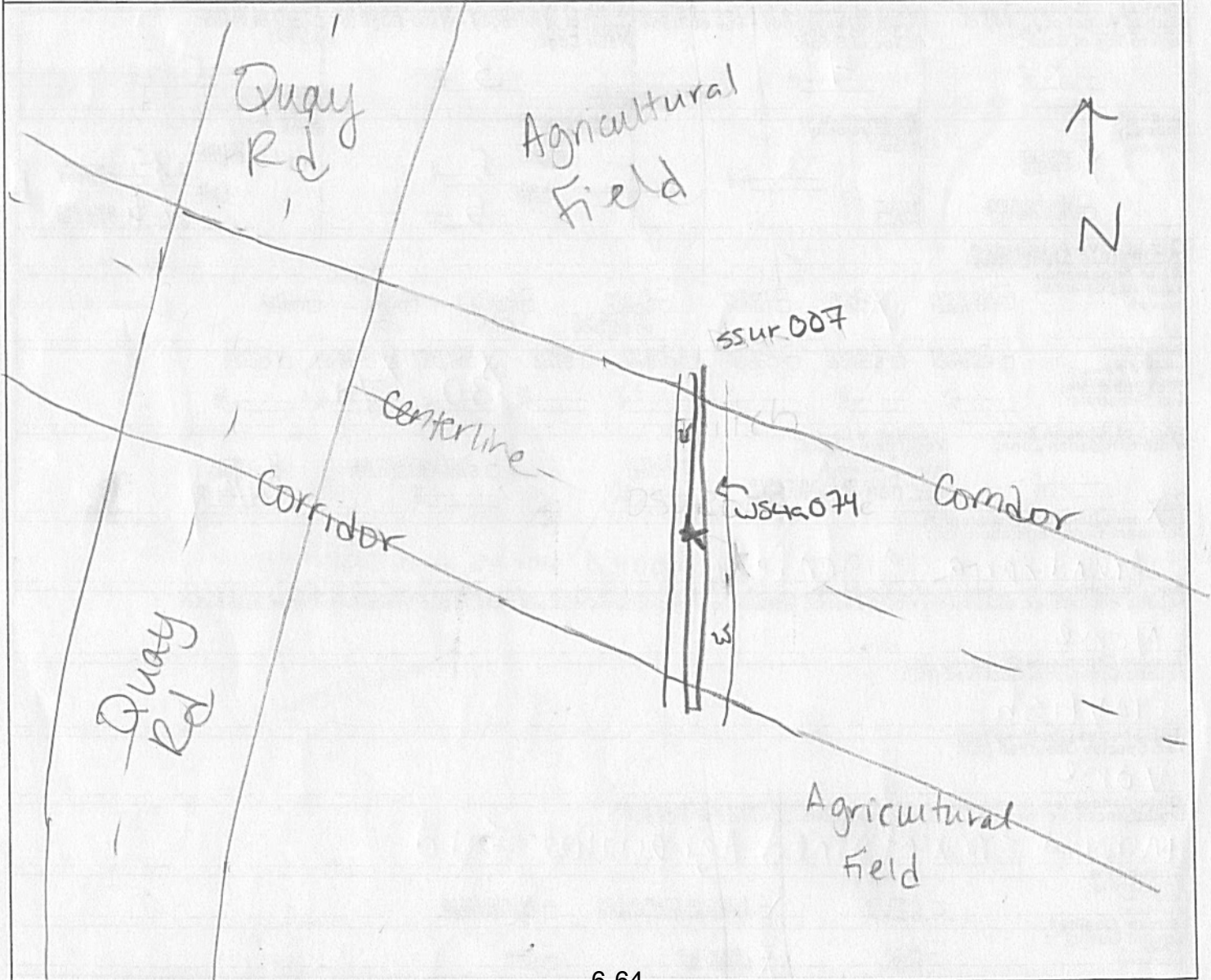
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssur007 facing southwest upstream.**



**Waterbody ssur007 facing northeast downstream.**



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssur007 facing southeast across bank.**



Ditch data point dsua070 facing southwest



Ditch data point DSUC050 facing south-southwest



Ditch data point DSUC051 facing northeast



Ditch data point DSUC052 facing south-southeast

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody dsur007 facing southwest upstream.**



**Waterbody dsur007 facing northeast downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody dsur007 facing southeast across bank.**

**Linear Waterbody Data Sheet**

|  |                           |   |                                     |   |   |
|--|---------------------------|---|-------------------------------------|---|---|
| <b>Survey Description</b>  |                           |   |                                     |   |   |
| Project Name:<br>ACP   |                           | Waterbody Name:<br>LWT to Quaker Swamp  |                                     | Waterbody ID:<br>SSU0015                                | Date:<br>01/14/10                                   |
| State:<br>VA   | County/Parish:<br>Suffolk | Company:<br>EST   | Crew Member Initials:<br>L.R., S.J. | Photos:<br>S, N, E                                      |   |
| Tract Number(s):<br>26-060-A003  |                           | Nearest Milepost:<br>49.9   |                                     | Associated Wetland ID(s):<br>WSU0026                    |   |
| Survey Type:<br>(check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |                           |   |                                     |   |   |
| <b>Physical Attributes</b>   |                           |   |                                     |   |   |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |                           |   |                                     |   |   |
| Waterbody Type:<br>(check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |                           |   |                                     |   |   |
| OHWM Width:<br>3 ft.   |                           | OHWM Indicator:<br>(check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining          |                                     |   |   |
| OHWM Height:<br>2 ft.  |                           | <input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change |                                     |   |   |
| N/A <input type="checkbox"/>   |                           |   |                                     |   |   |
| Width of Waterbody - Top of Bank to Top of Bank:<br>4 ft.  |                           | Width of Waterbody - Toe of Slope to Toe of Slope:<br>3 ft.   |                                     | Width of Waterbody - Water Edge to Water Edge:<br>4 ft. | Depth of Water:<br>(Approx.)<br>2 ft.               |
| N/A <input type="checkbox"/>   |                           | N/A <input type="checkbox"/>  |                                     | N/A <input type="checkbox"/>                            | N/A <input type="checkbox"/>                        |
| Sinuosity:<br>(check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   |                           | Water velocity:<br>(Approx.)<br>2 fps   |                                     | Bank height<br>Right: 2 ft.<br>Left: 1.5 ft.            | Bank slope<br>Right: 45 degrees<br>Left: 30 degrees |
| N/A <input type="checkbox"/>   |                           | N/A <input type="checkbox"/>  |                                     | N/A <input type="checkbox"/>                            | N/A <input type="checkbox"/>                        |
| <b>Qualitative Attributes</b>  |                           |   |                                     |   |   |
| Water Appearance:<br>(check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:                               |                           |   |                                     |   |   |
| Substrate:<br>(check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: |                           |   |                                     |   |   |
| % of Substrate: _____% _____% _____% _____% 60% 40% _____% _____%  |                           |   |                                     |   |   |
| Width of Riparian Zone:<br>50 ft.  |                           | Vegetative Layers:<br>(check all that apply) <input checked="" type="checkbox"/> Trees: _____ in. <input checked="" type="checkbox"/> Saplings/Shrubs: _____ in. <input checked="" type="checkbox"/> Herbs: N/A in.   |                                     |   |   |
| N/A <input type="checkbox"/>   |                           | N/A <input type="checkbox"/>  |                                     |   |   |
| Dominant Bank Vegetation (list):<br>Pinus taeda, Liquidambar styraciflua, Ilex opaca, Arundinaria gigantea   |                           |   |                                     |   |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>Deep pools, leaf packs, overhanging banks   |                           |   |                                     |   |   |
| Aquatic Organisms Observed (list):<br>None observed  |                           |   |                                     |   |   |
| T&E Species Observed (list):<br>none observed  |                           |   |                                     |   |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>none   |                           |   |                                     |   |   |
| Tributary is:<br>(check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |                           |   |                                     |   |   |
| Stream Quality*:<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low  |                           |   |                                     |   |   |



Waterbody ID:

SSW0015

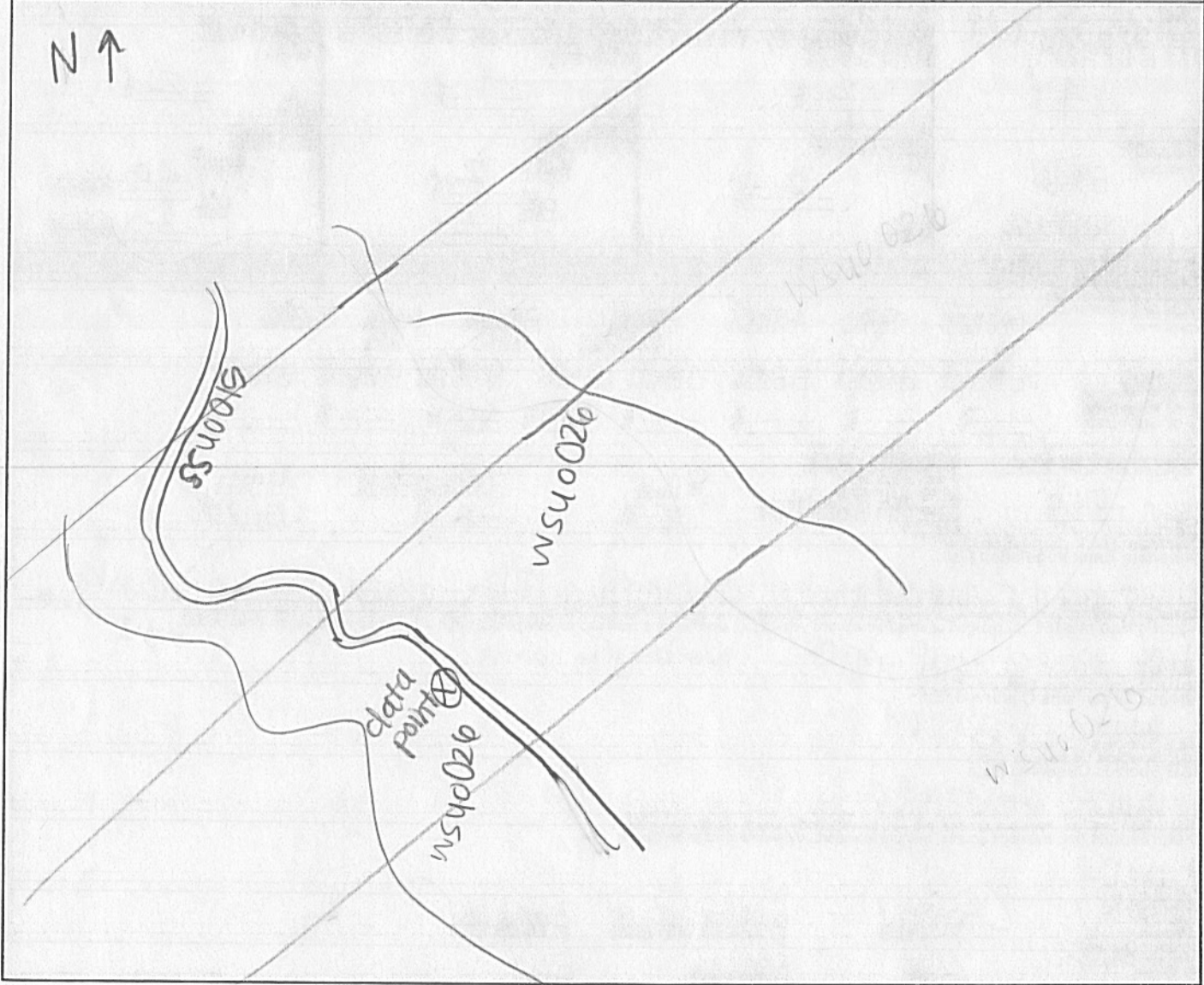
▪ **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo015 facing south upstream.**



**Waterbody data point ssuo015 facing north downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo015 facing east across bank.**

**Linear Waterbody Data Sheet**

|   |  |  |   |   |   |
|---|--|--|---|---|---|
| <b>Survey Description</b>   |  |  |   |   |   |
| Project Name:<br><u>ALP</u>   |  | Waterbody Name:<br><u>UNT to Quaker Swamp</u>                      |   | Waterbody ID:<br><u>55u0014</u>                                   | Date:<br><u>1/13/16</u>                                       |
| State:<br><u>VA</u>   | County/Parish:<br><u>Suffolk</u>                             | Company:<br><u>ESI</u>   | Crew Member Initials:<br><u>LR, SI</u>                  | Photos:<br><u>Facing N, S, E</u>                                  |   |
| Tract Number(s):<br><u>26-060-A004</u>  |  | Nearest Milepost:<br><u>50.5</u>                                   |   | Associated Wetland ID(s):<br><u>WSu0024</u>                       |   |
| Survey Type:<br><small>(check one)</small> <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |  |  |   |   |   |
| <b>Physical Attributes</b>  |  |  |   |   |   |
| Stream Classification:<br><small>(check one)</small> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |  |  |   |   |   |
| Waterbody Type:<br><small>(check one)</small> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |  |  |   |   |   |
| OHWM Width:<br><u>2</u> ft.   | OHWM Height:<br><u>0.5</u> ft.                               | OHWM Indicator:<br><small>(check all that apply)</small>           | <input type="checkbox"/> Clear line on bank             | <input type="checkbox"/> Shelving                                 | <input type="checkbox"/> Wrested vegetation                   |
| N/A <input type="checkbox"/>  | <input type="checkbox"/> Bent, matted, or missing vegetation | <input type="checkbox"/> Wrack line                                | <input type="checkbox"/> Litter and debris              | <input type="checkbox"/> Abrupt plant community change            | <input type="checkbox"/> Scouring                             |
| <input type="checkbox"/> Water staining   | <input type="checkbox"/> Soil characteristic change          | <input type="checkbox"/> Litter and debris                         | <input type="checkbox"/> Abrupt plant community change  | <input type="checkbox"/> Scouring                                 | <input type="checkbox"/> Water staining                       |
| Width of Waterbody - Top of Bank to Top of Bank:<br><u>2</u> ft.  |  | Width of Waterbody - Toe of Slope to Toe of Slope:<br><u>1</u> ft. |   | Width of Waterbody - Water Edge to Water Edge:<br><u>1</u> ft.    | Depth of Water:<br><small>(Approx.)</small><br><u>0.5</u> ft. |
| N/A <input type="checkbox"/>  |  | N/A <input type="checkbox"/>                                       |   | N/A <input type="checkbox"/>                                      | N/A <input type="checkbox"/>                                  |
| Sinuosity:<br><small>(check one)</small>  |  | Water velocity:<br><small>(Approx.)</small>                        |   | Bank height   | Bank slope  |
| <input type="checkbox"/> Straight   |  | <u>&lt; 1</u> fps  |   | Right: <u>1</u> ft.   | Right: <u>80</u> degrees                                      |
| <input checked="" type="checkbox"/> Meandering  |  | N/A <input type="checkbox"/>                                       |   | Left: <u>1</u> ft.  | Left: <u>80</u> degrees                                       |
| <b>Qualitative Attributes</b>   |  |  |   |   |   |
| Water Appearance:<br><small>(check one)</small> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other: |  |  |   |   |   |
| Substrate:<br><small>(check all that apply)</small>   |  |  |   |   |   |
| <input type="checkbox"/> Bedrock  | <input type="checkbox"/> Boulder                             | <input type="checkbox"/> Cobble                                    | <input type="checkbox"/> Gravel                         | <input checked="" type="checkbox"/> Sand                          | <input checked="" type="checkbox"/> Silt/ clay                |
| <input type="checkbox"/> Organic  | <input type="checkbox"/> Other:                              | <input type="checkbox"/> Organic                                   | <input type="checkbox"/> Other:                         | <input type="checkbox"/> Organic                                  | <input type="checkbox"/> Other:                               |
| % of Substrate: _____%  | % of Substrate: _____%                                       | % of Substrate: _____%   | % of Substrate: _____%                                  | <u>30</u> %   | <u>70</u> %   |
| Width of Riparian Zone:<br><u>60</u> ft.  | Vegetative Layers:<br><small>(check all that apply)</small>  | Avg. DBH of Dominants:<br><small>(approx.)</small>                 | <input checked="" type="checkbox"/> Trees: <u>6</u> in. | <input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in. | <input checked="" type="checkbox"/> Herbs: <u>NA</u> in.      |
| N/A <input type="checkbox"/>  | N/A <input type="checkbox"/>                                 | N/A <input type="checkbox"/>                                       | N/A <input type="checkbox"/>                            | N/A <input type="checkbox"/>                                      | N/A <input type="checkbox"/>                                  |
| Dominant Bank Vegetation <small>(list)</small> :<br><u>Liriodendron tulipifera, Arundinaria gigantea, Ilex opaca</u>  |  |  |   |   |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br><u>leaf packs, overhanging banks/roots</u>   |  |  |   |   |   |
| Aquatic Organisms Observed <small>(list)</small> :<br><u>none observed</u>  |  |  |   |   |   |
| T&E Species Observed <small>(list)</small> :<br><u>none observed</u>  |  |  |   |   |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br><u>none observed</u>  |  |  |   |   |   |
| Tributary Is:<br><small>(check one)</small> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |  |  |   |   |   |
| Stream Quality*:<br><small>(check one)</small> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low  |  |  |   |   |   |

Waterbody ID:  
SS40014

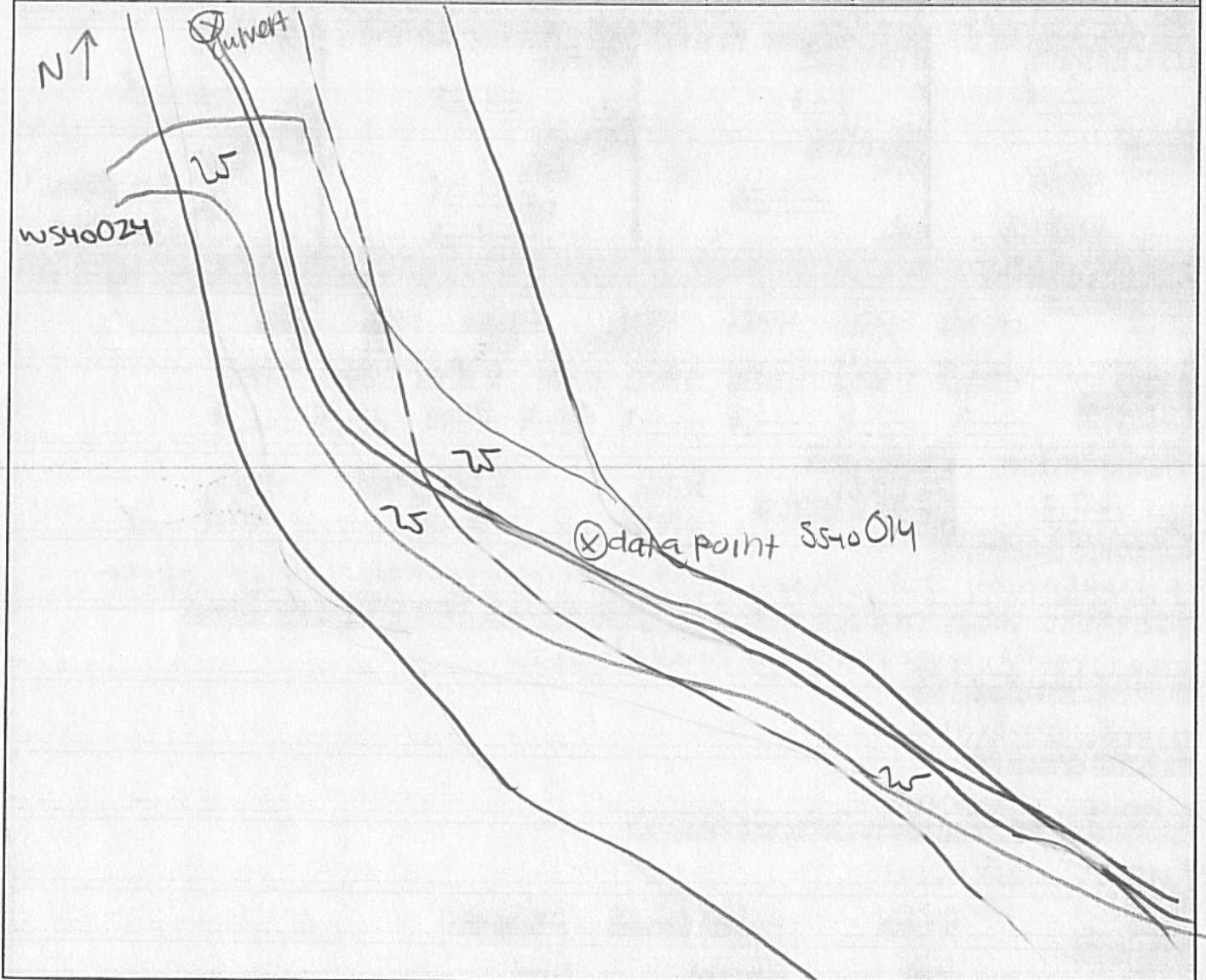
▪ **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo014 facing north upstream.**



**Waterbody data point ssuo014 facing south downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo014 facing east across bank.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody dsuo010 facing south upstream.**



**Waterbody dsuo010 facing north downstream.**



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody dsuo010 facing east across bank.**

**Linear Waterbody Data Sheet**

|   |   |   |  |   |                     |
|---|---|---|--|---|---------------------|
| <b>Survey Description</b>   |   |   |  |   |                     |
| Project Name: <u>ACP</u>  |   | Waterbody Name: <u>LINT to Quaker Swamp</u>   |  | Waterbody ID: <u>SSUP036</u>  | Date: <u>1/8/16</u> |
| State: <u>VA</u>  | County/Parish: <u>Suffolk</u>                                   | Company: <u>ESI</u>   | Crew Member Initials: <u>MKS NWM</u>   | Photos: <u>W, E, S</u>  |                     |
| Tract Number(s): <u>26-060-A014</u>   |   | Nearest Milepost: <u>52.1</u>   |  | Associated Wetland ID(s): <u>WSUP037</u>  |                     |
| Survey Type: (check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |   |   |  |   |                     |
| <b>Physical Attributes</b>  |   |   |  |   |                     |
| Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial   |   |   |  |   |                     |
| Waterbody Type: (check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |   |   |  |   |                     |
| OHWM Width: <u>4</u> ft.  | OHWM Height: <u>0.8</u> ft.                                     | N/A <input type="checkbox"/>  | OHWM Indicator: (check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining | <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change |                     |
| Width of Waterbody - Top of Bank to Top of Bank: <u>6</u> ft.   | Width of Waterbody - Toe of Slope to Toe of Slope: <u>5</u> ft. | Width of Waterbody - Water Edge to Water Edge: <u>4</u> ft.                                       | Depth of Water: (Approx.) <u>0.6</u> ft.   |   |                     |
| Sinuosity: (check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering   | Water velocity: (Approx.) <u>0</u> fps                          | Bank height Right: <u>6</u> ft. Left: <u>6</u> ft.  | Bank slope Right: <u>80</u> degrees Left: <u>80</u> degrees  |   |                     |
| <b>Qualitative Attributes</b>   |   |   |  |   |                     |
| Water Appearance: (check one) <input type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input checked="" type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:   |   |   |  |   |                     |
| Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: |   |   |  |   |                     |
| % of Substrate: _____% _____% _____% _____% <u>10</u> % <u>70</u> % <u>20</u> % _____%  |   |   |  |   |                     |
| Width of Riparian Zone: <u>10</u> ft.   | N/A <input type="checkbox"/>                                    | Vegetative Layers: (check all that apply) <input checked="" type="checkbox"/> Trees: <u>6</u> in. | <input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in.  | <input checked="" type="checkbox"/> Herbs: <u>NA</u> in.  |                     |
| Dominant Bank Vegetation (list): <u>Pinus taeda, Lonicera japonica, Rubus argutus, Liquidambar styraciflua</u>  |   |   |  |   |                     |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): <u>leaf packs</u>   |   |   |  |   |                     |
| Aquatic Organisms Observed (list): <u>None</u>  |   |   |  |   |                     |
| T&E Species Observed (list): <u>None</u>  |   |   |  |   |                     |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <u>Agriculture runoff</u>  |   |   |  |   |                     |
| Tributary is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |   |   |  |   |                     |
| Stream Quality *: (check one) <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low   |   |   |  |   |                     |

Waterbody ID:

SSup036

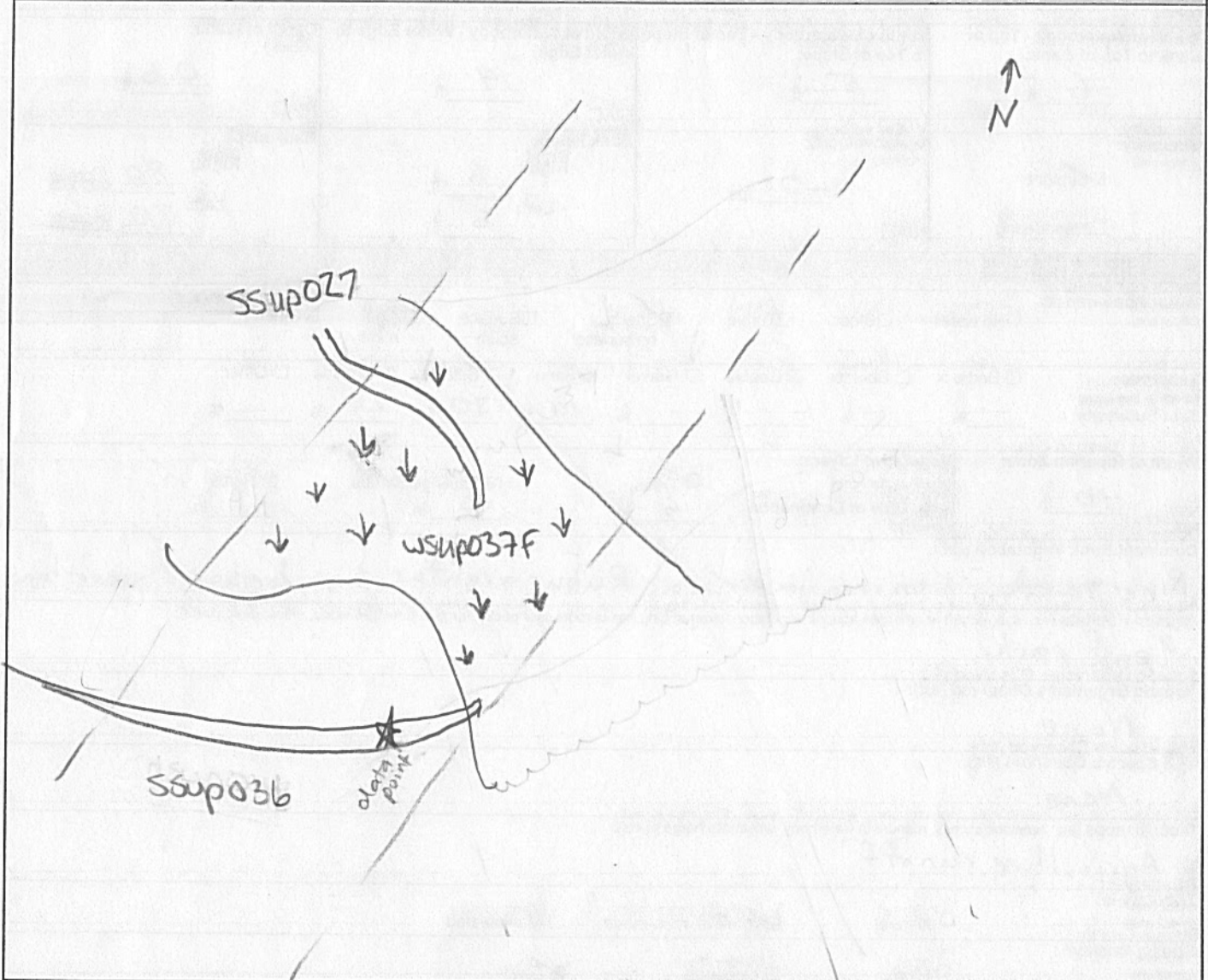
**High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssup036 facing west upstream.**



**Waterbody ssup036 facing east downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssup036 facing south across bank.**

**Linear Waterbody Data Sheet**

|   |  |  |   |                            |
|---|--|--|---|----------------------------|
| <b>Survey Description</b>   |  |  |   |                            |
| Project Name:<br><u>ACP</u>   |  | Waterbody Name:<br><u>UNTO Quaker Swamp</u>  | Waterbody ID:<br><u>55UP027</u>                               | Date:<br><u>1/8/16</u>     |
| State:<br><u>VA</u>   | County/Parish:<br><u>Suffolk</u>                                   | Company:<br><u>ESI</u>   | Crew Member Initials:<br><u>MKS, NWM</u>                      | Photos:<br><u>N, S, NE</u> |
| Tract Number(s):<br><u>26-060-A015</u>  |  | Nearest Milepost:<br><u>52.1</u>   | Associated Wetland ID(s):<br><u>WSUP037</u>                   |                            |
| Survey Type:<br><small>(check one)</small> <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |  |  |   |                            |
| <b>Physical Attributes</b>  |  |  |   |                            |
| Stream Classification:<br><small>(check one)</small> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |  |  |   |                            |
| Waterbody Type:<br><small>(check one)</small> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |  |  |   |                            |
| OHWM Width:<br><u>6</u> ft.   |  | OHWM Indicator:<br><small>(check all that apply)</small>   |   |                            |
| Height:<br><u>0.5</u> ft.   |  | <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining<br><input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change |   |                            |
| N/A <input type="checkbox"/>  |  |  |   |                            |
| Width of Waterbody - Top of Bank to Top of Bank:<br><u>8</u> ft.  | Width of Waterbody - Toe of Slope to Toe of Slope:<br><u>8</u> ft. | Width of Waterbody - Water Edge to Water Edge:<br><u>6</u> ft.   | Depth of Water:<br><small>(Approx.)</small><br><u>0.5</u> ft. |                            |
| N/A <input type="checkbox"/>  | N/A <input type="checkbox"/>                                       | N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>                                  |                            |
| Sinuosity:<br><small>(check one)</small>  | Water velocity:<br><small>(Approx.)</small>                        | Bank height  | Bank slope  |                            |
| <input type="checkbox"/> Straight<br><br><input checked="" type="checkbox"/> Meandering   | <u>&lt;1</u> fps<br><br>N/A <input type="checkbox"/>               | Right: <u>1</u> ft.<br>Left: <u>1</u> ft.  | Right: <u>10</u> degrees<br>Left: <u>10</u> degrees           |                            |
| <b>Qualitative Attributes</b>   |  |  |   |                            |
| Water Appearance:<br><small>(check one)</small> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:   |  |  |   |                            |
| Substrate:<br><small>(check all that apply)</small>   |  |  |   |                            |
| <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:<br>% of Substrate:      _____%      _____%      _____%      _____% <u>40</u> % <u>50</u> % <u>10</u> %      _____% |  |  |   |                            |
| Width of Riparian Zone:<br><u>200</u> ft.   |  | Vegetative Layers:<br><small>(check all that apply)</small>  |   |                            |
| N/A <input type="checkbox"/>  |  | <input checked="" type="checkbox"/> Trees: <u>6</u> in.<br><input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in.<br><input checked="" type="checkbox"/> Herbs: <u>NA</u> in.   |   |                            |
| Dominant Bank Vegetation (list):<br><u>Arundinaria gigantea, Acer rubrum, Smilax rotundifolia</u>   |  |  |   |                            |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br><u>leaf pack, woody debris</u>   |  |  |   |                            |
| Aquatic Organisms Observed (list):<br><u>None</u>   |  |  |   |                            |
| T&E Species Observed (list):<br><u>None</u>   |  |  |   |                            |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br><u>None</u>   |  |  |   |                            |
| Tributary Is:<br><small>(check one)</small> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |  |  |   |                            |
| Stream Quality *:<br><small>(check one)</small> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |  |  |   |                            |

Waterbody ID:

SSUP027

• **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

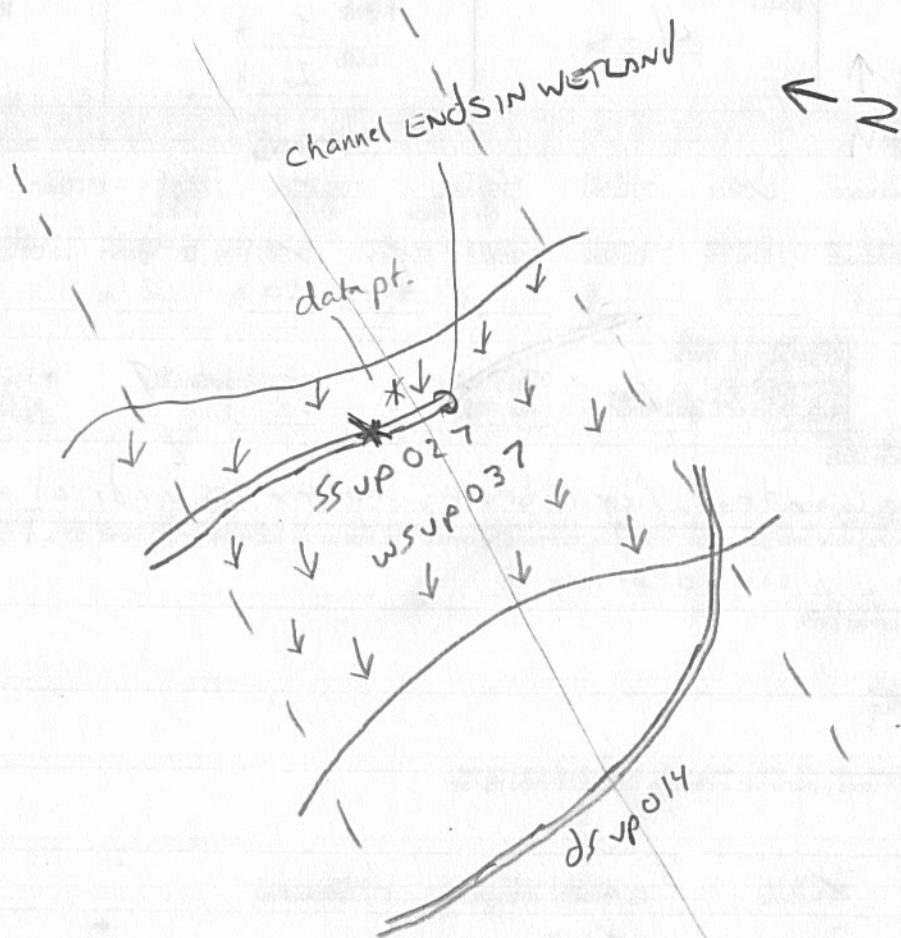
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor, severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

Very poorly defined bed and bank

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssup027 facing north upstream.**



**Waterbody data point ssup027 facing south downstream.**



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssup027 facing northeast across bank.**

# Linear Waterbody Data Sheet

| Survey Description   |  |  |   |
|--|--|--|---|
| Project Name:<br><u>ACP</u>  | Waterbody Name:<br><u>UNT to Quaker Swamp</u>                | Waterbody ID:<br><u>SSUP035</u>                                      | Date:<br><u>1/8/16</u>  |
| State:<br><u>VA</u>  | County/Parish:<br><u>Suffolk</u>                             | Company:<br><u>ESI</u>   | Crew Member Initials:<br><u>MKS, NWM</u>                          |
| Photos:<br><u>NW, SE, S</u>  |  |  |   |
| Tract Number(s):<br><u>26-060-A016</u>   |  | Nearest Milepost:<br><u>52.2</u>                                     | Associated Wetland ID(s):<br><u>wsup 021</u>                      |
| Survey Type:<br><small>(check one)</small>   |  |  |   |
| <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |  |  |   |
| Physical Attributes  |  |  |   |
| Stream Classification:<br><small>(check one)</small>   |  |  |   |
| <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial   |  |  |   |
| Waterbody Type:<br><small>(check one)</small>  |  |  |   |
| <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:  |  |  |   |
| OHWM<br><small>(check all that apply)</small>  |  | OHWM Indicator:<br><small>(check all that apply)</small>             |   |
| Width: <u>4.5</u> ft.  | Height: <u>0.5</u> ft.                                       | <input checked="" type="checkbox"/> Clear line on bank               | <input type="checkbox"/> Shelving                                 |
| <input type="checkbox"/> N/A   | <input type="checkbox"/> Bent, matted, or missing vegetation | <input type="checkbox"/> Wrack line                                  | <input checked="" type="checkbox"/> Litter and debris             |
|  |  | <input type="checkbox"/> Wrested vegetation                          | <input checked="" type="checkbox"/> Scouring                      |
|  |  | <input type="checkbox"/> Abrupt plant community change               | <input type="checkbox"/> Water staining                           |
| Width of Waterbody - Top of Bank to Top of Bank:<br><u>5</u> ft.   |  | Width of Waterbody - Toe of Slope to Toe of Slope:<br><u>4.5</u> ft. | Width of Waterbody - Water Edge to Water Edge:<br><u>4.5</u> ft.  |
|  |  | <input type="checkbox"/> N/A   | Depth of Water:<br><small>(Approx.)</small><br><u>0.5</u> ft.     |
| Sinuosity:<br><small>(check one)</small>   |  | Water velocity:<br><small>(Approx.)</small>                          | Bank height   |
| <input checked="" type="checkbox"/> Straight   |  | <u>0</u> fps   | Right: <u>4</u> ft.   |
| <input type="checkbox"/> Meandering  |  | <input type="checkbox"/> N/A   | Left: <u>4</u> ft.  |
|  |  |  | Bank slope<br>Right: <u>80</u> degrees<br>Left: <u>80</u> degrees |
| Qualitative Attributes   |  |  |   |
| Water Appearance:<br><small>(check one)</small>  |  |  |   |
| <input type="checkbox"/> No water <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:                                      |  |  |   |
| Substrate:<br><small>(check all that apply)</small>  |  |  |   |
| <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: |  |  |   |
| % of Substrate: _____%    _____%    _____%    _____% <u>10</u> % <u>80</u> % <u>10</u> %    _____%   |  |  |   |
| Width of Riparian Zone:<br><u>10</u> ft.   |  | Vegetative Layers:<br><small>(check all that apply)</small>          |   |
| <input type="checkbox"/> N/A   |  | <input type="checkbox"/> Trees: _____ in.                            | <input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in. |
|  |  |  | <input checked="" type="checkbox"/> Herbs: <u>NA</u> in.          |
| Dominant Bank Vegetation (list):<br><u>Lonicera japonica, Ligustrum sinense, Salix nigra</u>   |  |  |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br><u>leaf packs</u>   |  |  |   |
| Aquatic Organisms Observed (list):<br><u>tadpoles</u>  |  |  |   |
| T&E Species Observed (list):<br><u>None</u>  |  |  |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br><u>Agriculture runoff</u>  |  |  |   |
| Tributary is:<br><small>(check one)</small>  |  |  |   |
| <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated   |  |  |   |
| Stream Quality*:<br><small>(check one)</small>   |  |  |   |
| <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low  |  |  |   |

Waterbody ID:

SSup035

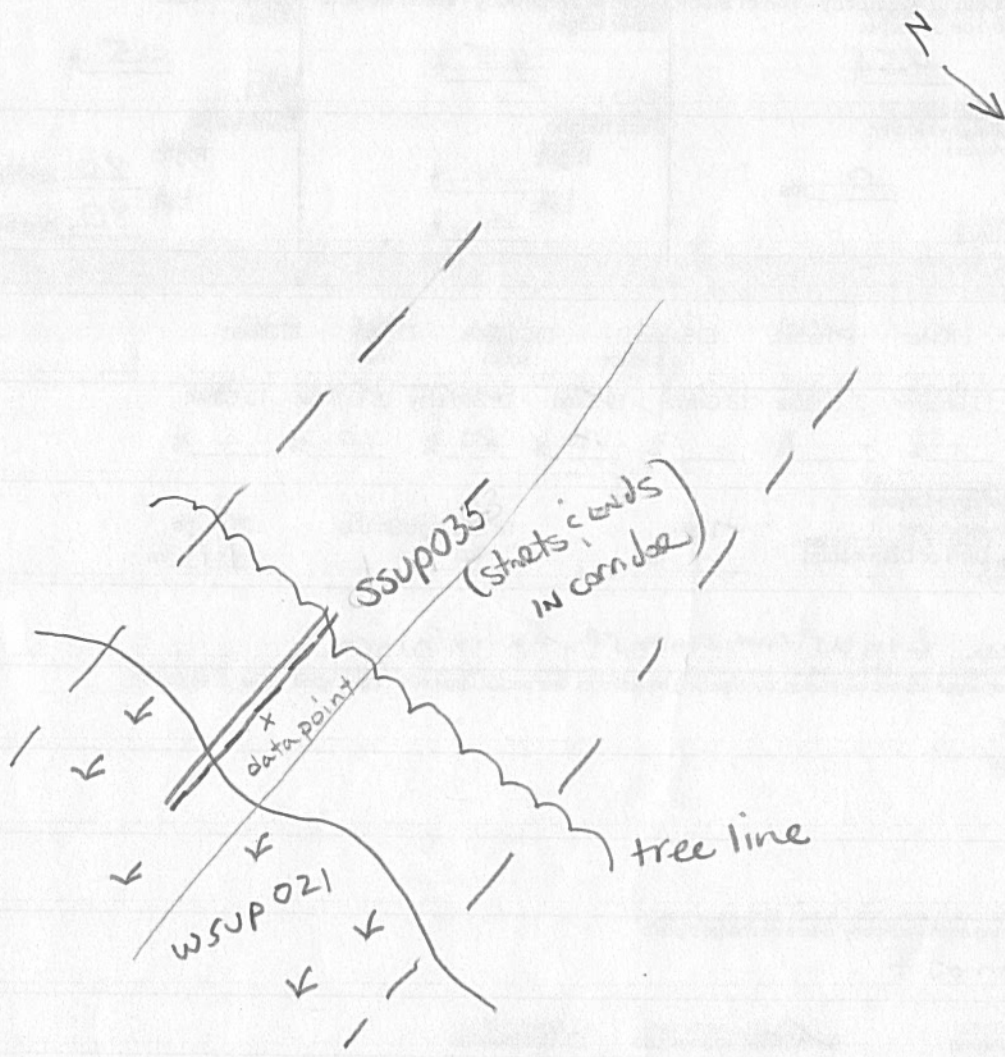
• **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssup035 facing northwest upstream.**



**Waterbody ssup035 facing southeast downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssup035 facing south across bank.**

# Linear Waterbody Data Sheet

|  |  |   |  |  |  |
|--|--|---|--|--|--|
| <b>Survey Description</b>  |  |   |  |  |  |
| Project Name:<br>ACP   |  | Waterbody Name:<br>LNT to Quaker Swamp                  |  | Waterbody ID:<br>550032                                | Date:<br>12/8/15                                   |
| State:<br>VA   | County/Parish:<br>SUFFOLK                                    | Company:<br>ESI-1                                       | Crew Member Initials:<br>MKS, KSM                    | Photos: Facing<br>S, N, W                              |  |
| Tract Number(s):<br>26-060-A016  |  | Nearest Milepost:<br>NA                                 | Associated Wetland ID(s):<br>WSUB Ø24                |  |  |
| Survey Type:<br>(check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |  |   |  |  |  |
| <b>Physical Attributes</b>   |  |   |  |  |  |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial   |  |   |  |  |  |
| Waterbody Type:<br>(check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |  |   |  |  |  |
| OHWM Width:<br>2 ft.   | OHWM Indicator:<br>(check all that apply)                    | <input checked="" type="checkbox"/> Clear line on bank  | <input type="checkbox"/> Shelving                    | <input type="checkbox"/> Wrested vegetation            | <input type="checkbox"/> Scouring                  |
| OHWM Height:<br>.5 ft.   | <input type="checkbox"/> Bent, matted, or missing vegetation | <input type="checkbox"/> Wrack line                     | <input type="checkbox"/> Litter and debris           | <input type="checkbox"/> Abrupt plant community change | <input checked="" type="checkbox"/> Water staining |
| N/A <input type="checkbox"/>   |  |   |  |  |  |
| Width of Waterbody - Top of Bank to Top of Bank:<br>3 ft.  | Width of Waterbody - Toe of Slope to Toe of Slope:<br>2 ft.  | Width of Waterbody - Water Edge to Water Edge:<br>2 ft. | Depth of Water:<br>(Approx.)<br>0.5 ft.              |  |  |
| N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>                                 | N/A <input type="checkbox"/>                            | N/A <input type="checkbox"/>                         |  |  |
| Sinuosity:<br>(check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering   | Water velocity:<br>(Approx.)<br>0 fps                        | Bank height<br>Right: 1 ft.<br>Left: 1 ft.              | Bank slope<br>Right: 45 degrees<br>Left: 45 degrees  |  |  |
| N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>                                 | N/A <input type="checkbox"/>                            | N/A <input type="checkbox"/>                         |  |  |
| <b>Qualitative Attributes</b>  |  |   |  |  |  |
| Water Appearance:<br>(check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other: |  |   |  |  |  |
| Substrate:<br>(check all that apply)   |  |   |  |  |  |
| Substrate:<br>% of Substrate:  | <input type="checkbox"/> Bedrock                             | <input type="checkbox"/> Boulder                        | <input type="checkbox"/> Cobble                      | <input type="checkbox"/> Gravel                        | <input checked="" type="checkbox"/> Sand           |
| %  | %  | %   | %  | 20%  | 80%  |
| %  | %  | %   | %  | %  | %  |
| Width of Riparian Zone:<br>50 ft.  | Vegetative Layers:<br>(check all that apply)                 | <input checked="" type="checkbox"/> Trees:              | <input checked="" type="checkbox"/> Saplings/Shrubs: | <input checked="" type="checkbox"/> Herbs              |  |
| N/A <input type="checkbox"/>   | Avg. DBH of Dominants:<br>(approx.)                          | 6 in.   | 2 in.  | NA in.   |  |
| Dominant Bank Vegetation (list):<br>Clethra alnifolia, Pinus taeda, Morella cerifera, Quercus nigra  |  |   |  |  |  |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>submerged leaves  |  |   |  |  |  |
| Aquatic Organisms Observed (list):<br>none   |  |   |  |  |  |
| T&E Species Observed (list):<br>none   |  |   |  |  |  |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>man made ditch   |  |   |  |  |  |
| Tributary is:<br>(check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |  |   |  |  |  |
| Stream Quality *:<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |  |   |  |  |  |

Waterbody ID:

SSUP 032

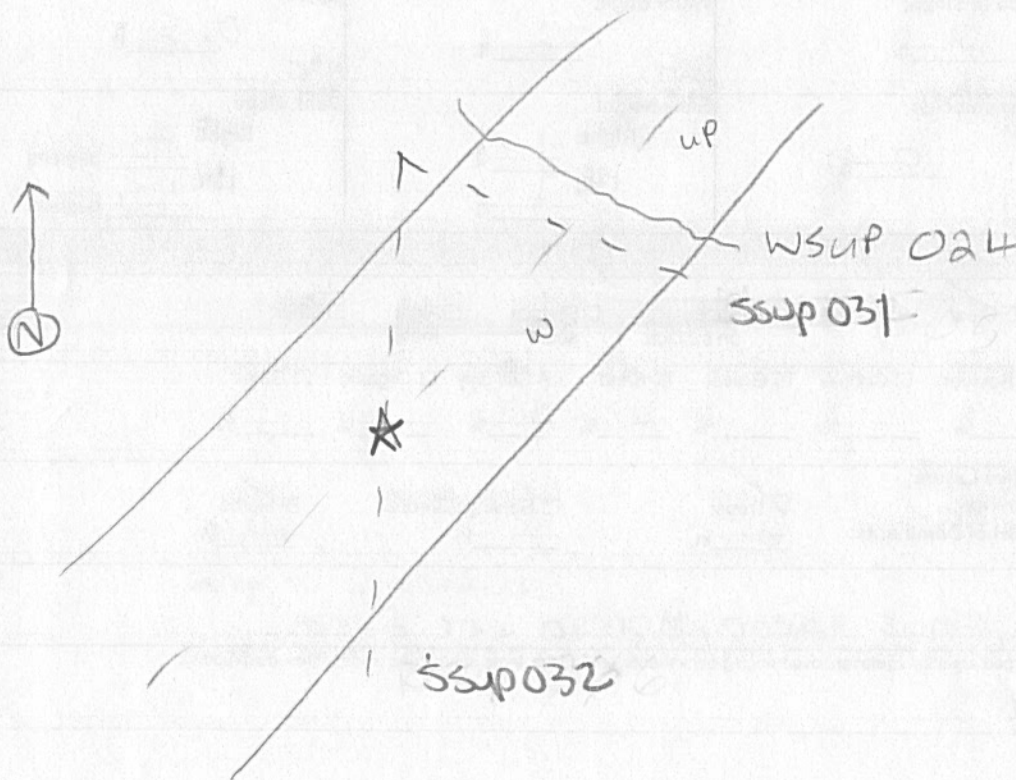
▪ **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssup032 facing south upstream.**



**Waterbody data point ssup032 facing north downstream.**



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssup032 facing west across bank.**

# Linear Waterbody Data Sheet

|  |  |   |  |  |  |
|--|--|---|--|--|--|
| <b>Survey Description</b>  |  |   |  |  |  |
| Project Name:<br>ACP   |  | Waterbody Name:<br>Lnt to Quaker Swamp                  |  | Waterbody ID:<br>SSup 031                              | Date:<br>12/8/15                                   |
| State:<br>VA   | County/Parish:<br>SUFFOLK                                    | Company:<br>ESI   | Crew Member Initials:<br>MKS, KSM                    | Photos:<br>Facing SE, NW, SW                           |  |
| Tract Number(s):<br>26-060-A016, 26-060-A017   |  | Nearest Milepost:<br>NA                                 | Associated Wetland ID(s):<br>WSUP 024                |  |  |
| Survey Type:<br>(check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |  |   |  |  |  |
| <b>Physical Attributes</b>   |  |   |  |  |  |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial   |  |   |  |  |  |
| Waterbody Type:<br>(check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |  |   |  |  |  |
| OHWM Width:<br>3 ft.   | OHWM Indicator:<br>(check all that apply)                    | <input checked="" type="checkbox"/> Clear line on bank  | <input type="checkbox"/> Shelving                    | <input type="checkbox"/> Wrested vegetation            | <input type="checkbox"/> Scouring                  |
| Height:<br>.5 ft.  | <input type="checkbox"/> Bent, matted, or missing vegetation | <input type="checkbox"/> Wrack line                     | <input type="checkbox"/> Litter and debris           | <input type="checkbox"/> Abrupt plant community change | <input checked="" type="checkbox"/> Water staining |
| N/A <input type="checkbox"/>   |  |   |  |  |  |
| Width of Waterbody - Top of Bank to Top of Bank:<br>4 ft.  | Width of Waterbody - Toe of Slope to Toe of Slope:<br>3 ft.  | Width of Waterbody - Water Edge to Water Edge:<br>3 ft. | Depth of Water:<br>(Approx.)<br>0.5 ft.              | N/A <input type="checkbox"/>                           | N/A <input type="checkbox"/>                       |
| Sinuosity:<br>(check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering   | Water velocity:<br>(Approx.)<br>0 fps                        | Bank height<br>Right: 1 ft.<br>Left: 1 ft.              | Bank slope<br>Right: 45 degrees<br>Left: 45 degrees  | N/A <input type="checkbox"/>                           | N/A <input type="checkbox"/>                       |
| <b>Qualitative Attributes</b>  |  |   |  |  |  |
| Water Appearance:<br>(check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other: |  |   |  |  |  |
| Substrate:<br>(check all that apply)   |  |   |  |  |  |
| % of Substrate:  | %  | %   | %  | 10%  | 90%  |
| Width of Riparian Zone:<br>50 ft.  | Vegetative Layers:<br>(check all that apply)                 | <input checked="" type="checkbox"/> Trees:              | <input checked="" type="checkbox"/> Saplings/Shrubs: | <input checked="" type="checkbox"/> Herbs              | NA in.   |
| N/A <input type="checkbox"/>   | Avg. DBH of Dominants:<br>(approx.)<br>3 in.                 | 2 in.   |  |  |  |
| Dominant Bank Vegetation (list):<br>Liquidambar styraciflua<br>Ilex opaca, Arundinaria gigantea, Quercus nigra   |  |   |  |  |  |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>leaf packs  |  |   |  |  |  |
| Aquatic Organisms Observed (list):<br>none   |  |   |  |  |  |
| T&E Species Observed (list):<br>none   |  |   |  |  |  |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>man made ditch   |  |   |  |  |  |
| Tributary Is:<br>(check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |  |   |  |  |  |
| Stream Quality:<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |  |   |  |  |  |

Waterbody ID:

SSup031

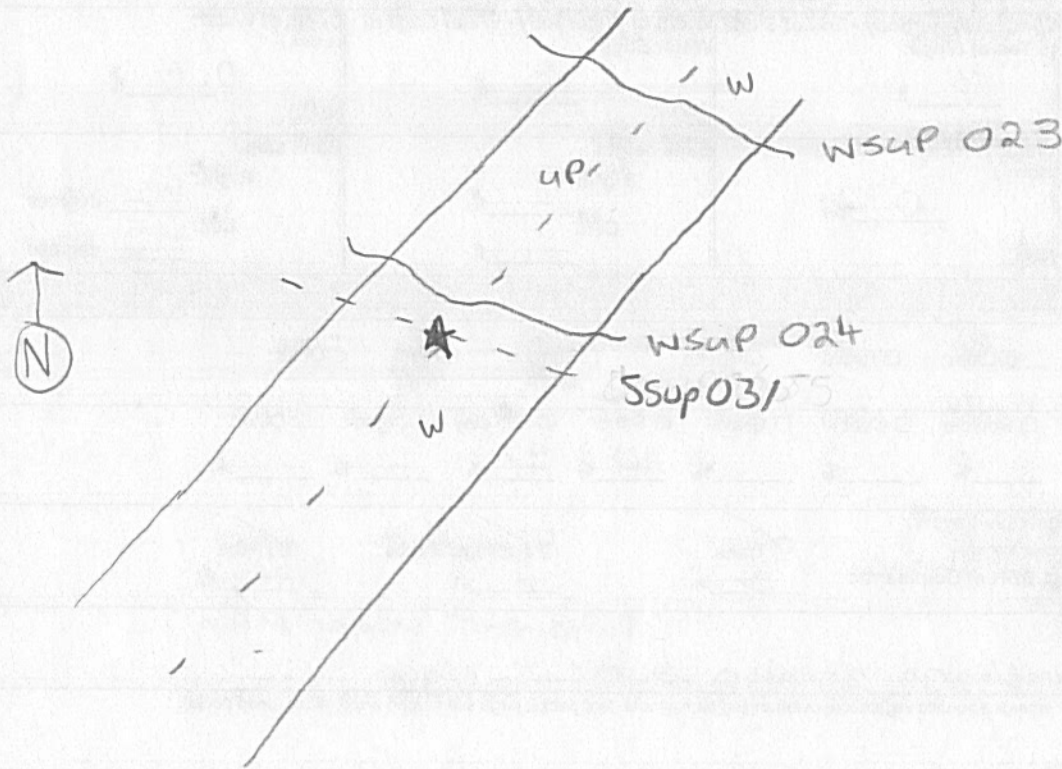
▪ **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssup031 facing southeast upstream.**



**Waterbody data point ssup031 facing northwest downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssup031 facing southwest across bank.**

# Linear Waterbody Data Sheet

## Survey Description

|  |                                  |  |  |   |                        |
|--|----------------------------------|--|--|---|------------------------|
| Project Name:<br><b>ACP</b>            |                                  | Waterbody Name:<br><b>4NTto Speights RYN</b> |  | Waterbody ID:<br><b>SSuo024</b>             | Date:<br><b>2/9/16</b> |
| State:<br><b>VA</b>                    | County/Parish:<br><b>Suffolk</b> | Company:<br><b>ESI</b>                       | Crew Member Initials:<br><b>LR, MS</b> | Photos: <b>Facing S, N, E</b>               |                        |
| Tract Number(s):<br><b>26-060-A022</b> |                                  | Nearest Milepost:<br><b>53.9</b>             |  | Associated Wetland ID(s):<br><b>WSuo028</b> |                        |

Survey Type: (check one)  Centerline  Re-Route  Access Road  Other:

## Physical Attributes

Stream Classification: (check one)  Ephemeral  Intermittent  Perennial

Waterbody Type: (check one)  River  Stream  Ditch  Canal  Other:

|  |   |   |  |  |   |   |
|--|---|---|--|--|---|---|
| OHWM Width: <u>3</u> ft.<br>Height: <u>0.5</u> ft.<br>N/A <input type="checkbox"/> | OHWM Indicator: (check all that apply)                                  | <input type="checkbox"/> Clear line on bank | <input type="checkbox"/> Shelving          | <input type="checkbox"/> Wrested vegetation            | <input type="checkbox"/> Scouring                   | <input type="checkbox"/> Water staining |
|  | <input checked="" type="checkbox"/> Bent, matted, or missing vegetation | <input type="checkbox"/> Wrack line         | <input type="checkbox"/> Litter and debris | <input type="checkbox"/> Abrupt plant community change | <input type="checkbox"/> Soil characteristic change |   |

|  |  |  |   |
|--|--|--|---|
| Width of Waterbody - Top of Bank to Top of Bank:<br><u>4</u> ft. | Width of Waterbody - Toe of Slope to Toe of Slope:<br><u>3</u> ft. | Width of Waterbody - Water Edge to Water Edge:<br><u>3</u> ft.<br>N/A <input type="checkbox"/> | Depth of Water: (Approx.)<br><u>0.5</u> ft.<br>N/A <input type="checkbox"/> |
|--|--|--|---|

|   |   |  |   |
|---|---|--|---|
| Sinuosity: (check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering | Water velocity: (Approx.)<br><u>0</u> fps<br>N/A <input type="checkbox"/> | Bank height<br>Right: <u>1</u> ft.<br>Left: <u>1</u> ft. | Bank slope<br>Right: <u>80</u> degrees<br>Left: <u>80</u> degrees |
|---|---|--|---|

## Qualitative Attributes

Water Appearance: (check one)  No water  Clear  Turbid  Sheen on surface  Surface scum  Algal mats  Other:

Substrate: (check all that apply)  Bedrock  Boulder  Cobble  Gravel  Sand  Silt/clay  Organic  Other:  
% of Substrate: \_\_\_\_\_% \_\_\_\_\_% \_\_\_\_\_% \_\_\_\_\_% 60% 40% \_\_\_\_\_% \_\_\_\_\_%

|  |   |   |   |  |
|--|---|---|---|--|
| Width of Riparian Zone:<br><u>40</u> ft.<br>N/A <input type="checkbox"/> | Vegetative Layers: (check all that apply)<br>Avg. DBH of Dominants: (approx.) | <input checked="" type="checkbox"/> Trees: <u>5</u> in. | <input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in. | <input checked="" type="checkbox"/> Herbs: <u>NA</u> in. |
|--|---|---|---|--|

Dominant Bank Vegetation (list):  
**Arundinaria gigantea, Pinus taeda**

Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):  
**leaf packs**

Aquatic Organisms Observed (list):  
**none observed**

T&E Species Observed (list):  
**none observed**

Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):  
**ag. field edge**

Tributary Is: (check one)  Natural  Artificial, man-made  Manipulated

Stream Quality \*: (check one)  High  Moderate  Low

Waterbody ID:

5540024

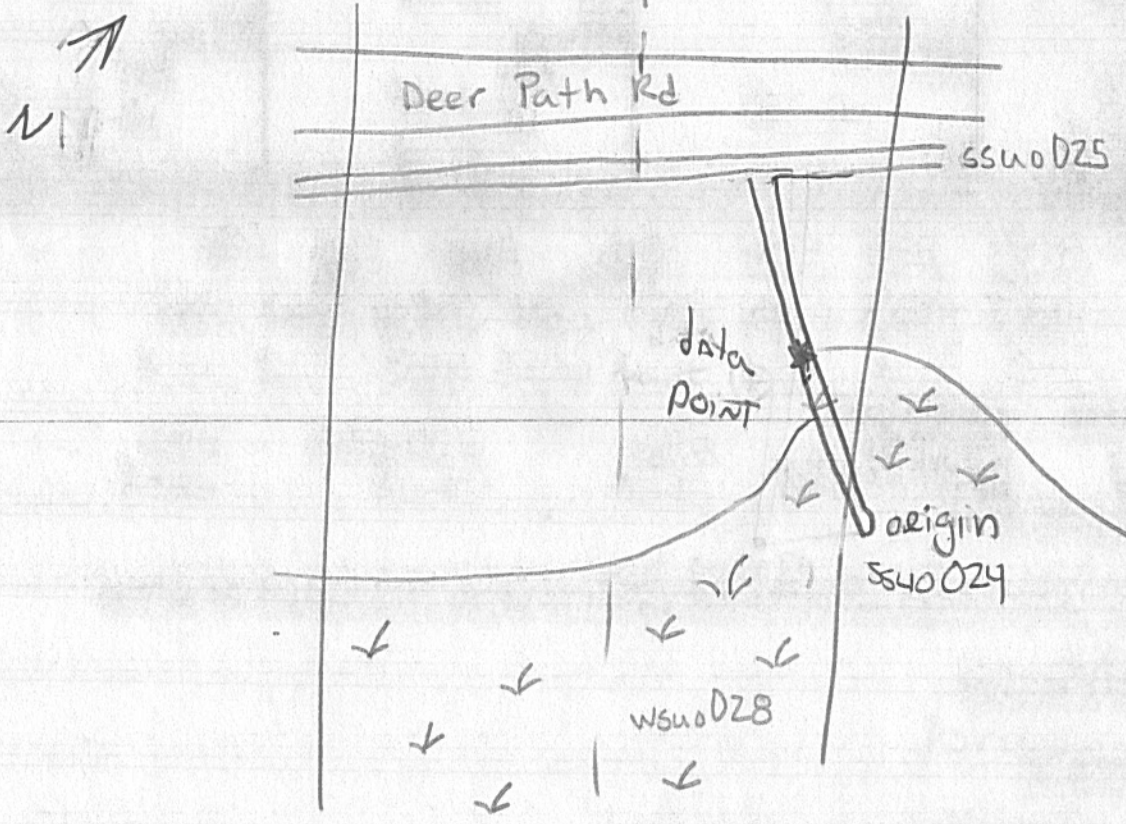
**High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo024 facing south upstream.**



**Waterbody data point ssuo024 facing north downstream.**



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo024 facing east across.**

# Linear Waterbody Data Sheet

|   |  |  |   |   |
|---|--|--|---|---|
| <b>Survey Description</b>   |  |  |   |   |
| Project Name: <u>ACP</u>  |  | Waterbody Name: <u>UNT to SPEIGHTS RUN</u>   | Waterbody ID: <u>55U0025</u>  | Date: <u>2/19/16</u>  |
| State: <u>VA</u>  | County/Parish: <u>Suffolk</u>  | Company: <u>ESI</u>  | Crew Member Initials: <u>LR, MS</u>                                     | Photos: <u>Facing W, E, S</u>   |
| Tract Number(s): <u>26-060-A022</u>   |  | Nearest Milepost: <u>53.9</u>  | Associated Wetland ID(s): <u>NA</u>                                     |   |
| Survey Type: (check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |  |  |   |   |
| <b>Physical Attributes</b>  |  |  |   |   |
| Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial   |  |  |   |   |
| Waterbody Type: (check one) <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |  |  |   |   |
| OHWM Width: <u>4</u> ft.  | OHWM Height: <u>0.9</u> ft.  | OHWM Indicator: (check all that apply) <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining | <input checked="" type="checkbox"/> Bent, matted, or missing vegetation | <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change |
| N/A <input type="checkbox"/>  | N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>  | N/A <input type="checkbox"/>  |
| Width of Waterbody - Top of Bank to Top of Bank: <u>5</u> ft.   | Width of Waterbody - Toe of Slope to Toe of Slope: <u>4</u> ft.  | Width of Waterbody - Water Edge to Water Edge: <u>4</u> ft.  | Depth of Water: (Approx.) <u>1</u> ft.                                  |   |
| N/A <input type="checkbox"/>  | N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>  | N/A <input type="checkbox"/>  |
| Sinuosity: (check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering   | Water velocity: (Approx.) <u>0</u> fps   | Bank height: Right: <u>3</u> ft. Left: <u>2</u> ft.  | Bank slope: Right: <u>70</u> degrees Left: <u>45</u> degrees            |   |
| N/A <input type="checkbox"/>  | N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>  | N/A <input type="checkbox"/>  |
| <b>Qualitative Attributes</b>   |  |  |   |   |
| Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:                               |  |  |   |   |
| Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: |  |  |   |   |
| % of Substrate: _____%  | % of Substrate: _____%   | % of Substrate: <u>60</u> %  | % of Substrate: <u>40</u> %   | % of Substrate: _____%  |
| Width of Riparian Zone: <u>20</u> ft.   | Vegetative Layers: (check all that apply) <input type="checkbox"/> Trees: _____ in. <input type="checkbox"/> Saplings/Shrubs: _____ in. <input checked="" type="checkbox"/> Herbs: <u>NA</u> in. | Avg. DBH of Dominants: _____ in.   | Avg. DBH of Dominants: _____ in.  | Avg. DBH of Dominants: _____ in.  |
| N/A <input type="checkbox"/>  | N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>   | N/A <input type="checkbox"/>  | N/A <input type="checkbox"/>  |
| Dominant Bank Vegetation (list): <u>Juncus effusus, Rubus argutus, Persicaria sagittata</u>   |  |  |   |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): <u>none observed</u>  |  |  |   |   |
| Aquatic Organisms Observed (list): <u>none observed</u>   |  |  |   |   |
| T&E Species Observed (list): <u>none observed</u>   |  |  |   |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <u>roadside/ag. field edge ditch</u>   |  |  |   |   |
| Tributary Is: (check one) <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |  |  |   |   |
| Stream Quality #: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |  |  |   |   |

Waterbody ID:

SSW025

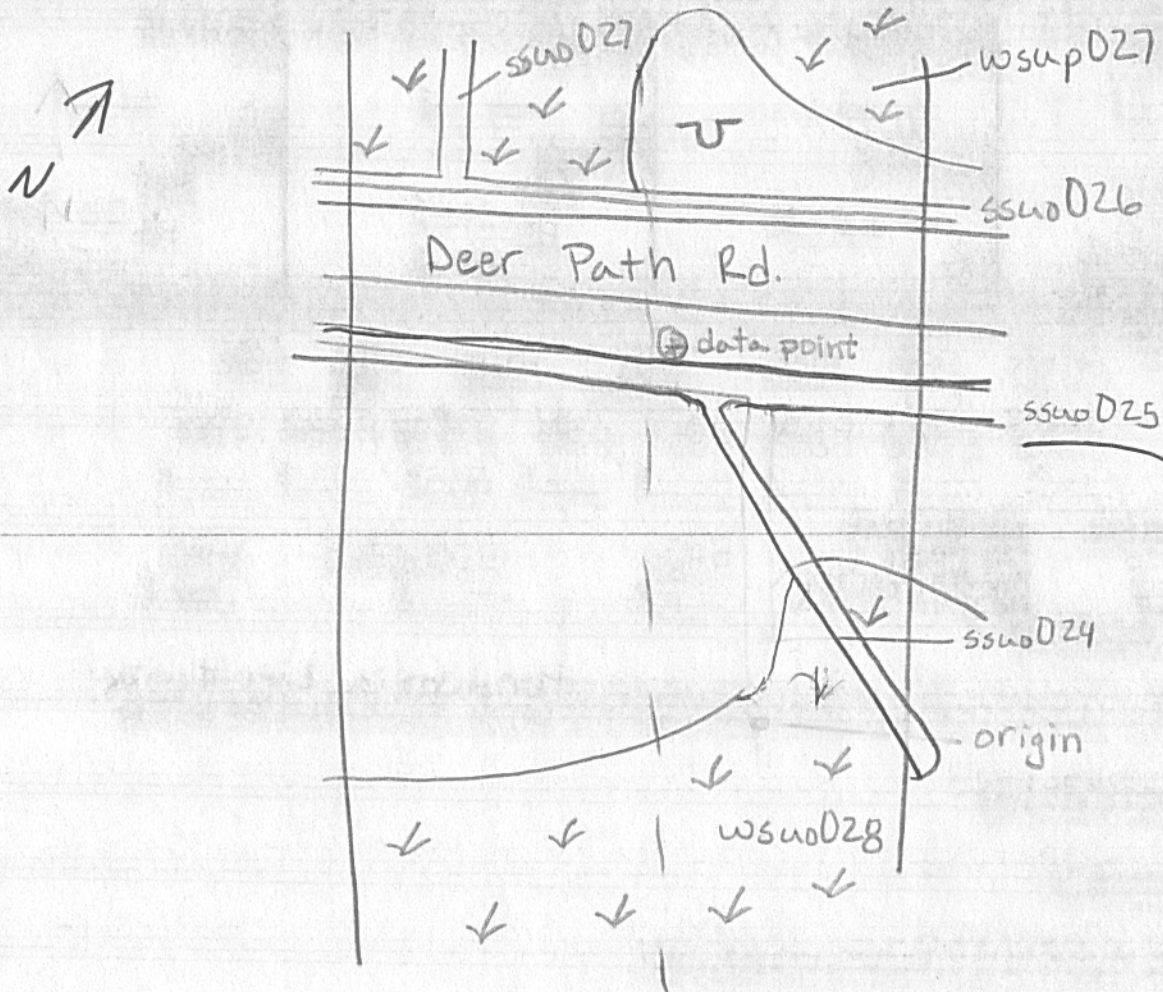
**High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssu025 facing west upstream.**



**Waterbody data point ssu025 facing east downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo025 facing south across.**

# Linear Waterbody Data Sheet

## Survey Description

|                                     |                               |   |                                     |  |                      |
|-------------------------------------|-------------------------------|---|-------------------------------------|--|----------------------|
| Project Name: <u>ACP</u>            |                               | Waterbody Name: <u>UNT to SPERHIS RUN</u> |                                     | Waterbody ID: <u>55u0026</u>             | Date: <u>2/19/16</u> |
| State: <u>VA</u>                    | County/Parish: <u>Suffolk</u> | Company: <u>ESI</u>                       | Crew Member Initials: <u>LR, MS</u> | Photos: <u>Facing E, W, N</u>            |                      |
| Tract Number(s): <u>26-060-A023</u> |                               | Nearest Milepost: <u>54.0</u>             |                                     | Associated Wetland ID(s): <u>WSup027</u> |                      |

Survey Type: (check one)  Centerline  Re-Route  Access Road  Other:

## Physical Attributes

Stream Classification: (check one)  Ephemeral  Intermittent  Perennial

Waterbody Type: (check one)  River  Stream  Ditch  Canal  Other:

|  |   |   |  |  |   |   |
|--|---|---|--|--|---|---|
| OHWM Width: <u>3</u> ft.<br>Height: <u>0.5</u> ft.<br>N/A <input type="checkbox"/> | OHWM Indicator: (check all that apply)                                  | <input type="checkbox"/> Clear line on bank | <input type="checkbox"/> Shelving          | <input type="checkbox"/> Wrested vegetation            | <input type="checkbox"/> Scouring                   | <input type="checkbox"/> Water staining |
|  | <input checked="" type="checkbox"/> Bent, matted, or missing vegetation | <input type="checkbox"/> Wrack line         | <input type="checkbox"/> Litter and debris | <input type="checkbox"/> Abrupt plant community change | <input type="checkbox"/> Soil characteristic change |   |

|   |   |   |  |
|---|---|---|--|
| Width of Waterbody - Top of Bank to Top of Bank: <u>4</u> ft. | Width of Waterbody - Toe of Slope to Toe of Slope: <u>2</u> ft. | Width of Waterbody - Water Edge to Water Edge: <u>3</u> ft.<br>N/A <input type="checkbox"/> | Depth of Water: (Approx.) <u>0.7</u> ft.<br>N/A <input type="checkbox"/> |
|---|---|---|--|

|   |  |  |   |
|---|--|--|---|
| Sinuosity: (check one) <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering | Water velocity: (Approx.) <u>0</u> fps<br>N/A <input type="checkbox"/> | Bank height<br>Right: <u>2</u> ft.<br>Left: <u>2</u> ft. | Bank slope<br>Right: <u>70</u> degrees<br>Left: <u>70</u> degrees |
|---|--|--|---|

## Qualitative Attributes

Water Appearance: (check one)  No water  Clear  Turbid  Sheen on surface  Surface scum  Algal mats  Other:

Substrate: (check all that apply)  Bedrock  Boulder  Cobble  Gravel  Sand  Silt/clay  Organic  Other:  
% of Substrate: \_\_\_\_\_% \_\_\_\_\_% \_\_\_\_\_% \_\_\_\_\_% 60% 40% \_\_\_\_\_% \_\_\_\_\_%

|   |  |   |   |  |
|---|--|---|---|--|
| Width of Riparian Zone: <u>30</u> ft.<br>N/A <input type="checkbox"/> | Vegetative Layers: (check all that apply)<br>Avg. DBH of Dominants: (approx.) <u>4</u> in. | <input checked="" type="checkbox"/> Trees: <u>4</u> in. | <input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in. | <input checked="" type="checkbox"/> Herbs: <u>NA</u> in. |
|---|--|---|---|--|

Dominant Bank Vegetation (list): Liquidambar styraciflua, Arundinaria gigantea

Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): leaf packs

Aquatic Organisms Observed (list): none observed

T&E Species Observed (list): none observed

Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): roadside ditch

Tributary Is: (check one)  Natural  Artificial, man-made  Manipulated

Stream Quality \*: (check one)  High  Moderate  Low

Waterbody ID:

SSUD026

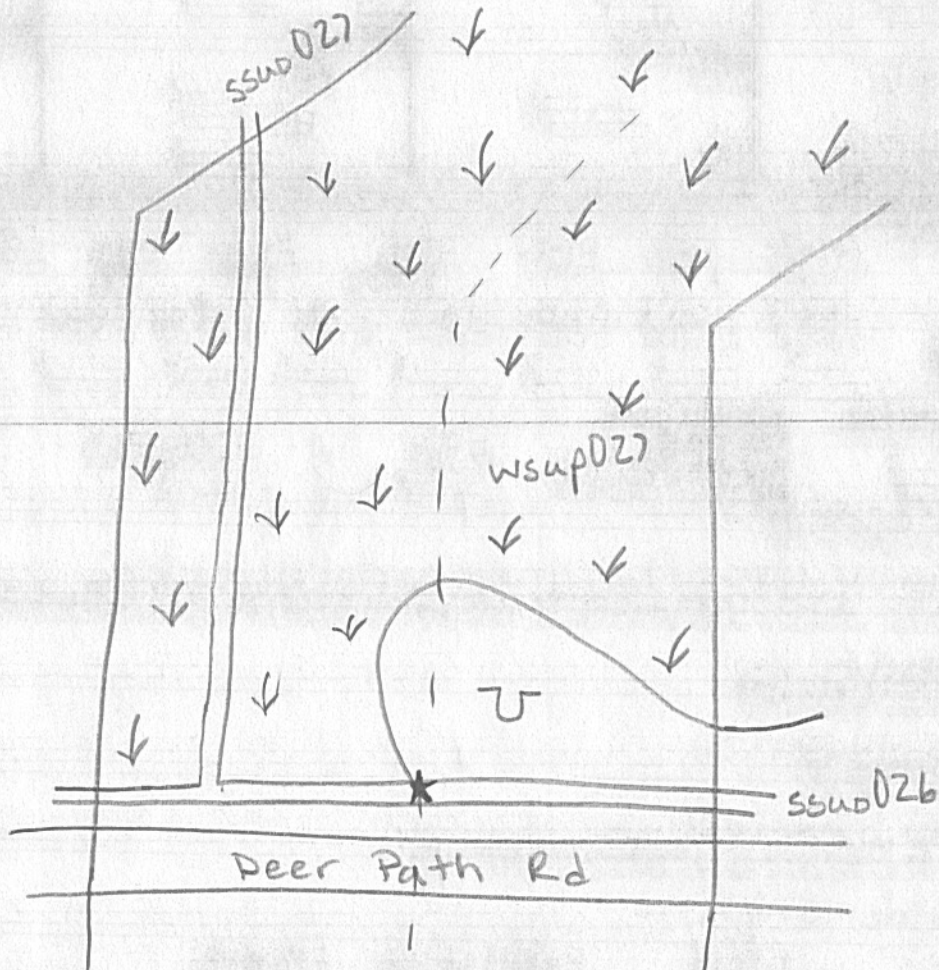
▪ **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo026 facing east upstream.**



**Waterbody data point ssuo026 facing west downstream.**



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo026 facing north across.**

# Linear Waterbody Data Sheet

|  |                                  |  |   |  |
|--|----------------------------------|--|---|--|
| <b>Survey Description</b>  |                                  |  |   |  |
| Project Name:<br><u>ACP</u>  |                                  | Waterbody Name:<br><u>UNT to Cohoon Creek</u>  |   | Waterbody ID:<br><u>SSUR 008</u>                               |
| Date:<br><u>20 Jan 2016</u>  |                                  |  |   |  |
| State:<br><u>VA</u>  | County/Parish:<br><u>Suffolk</u> | Company:<br><u>ESI</u>   | Crew Member Initials:<br><u>CAS CSM</u> | Photos:<br><u>SE, W, NE</u>                                    |
| Tract Number(s):<br><u>26-060-A026</u>   |                                  | Nearest Milepost:<br><u>54.6</u>   |   | Associated Wetland ID(s):<br><u>WSUR 007</u>                   |
| Survey Type:<br><small>(check one)</small>   |                                  |  |   |  |
| <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |                                  |  |   |  |
| <b>Physical Attributes</b>   |                                  |  |   |  |
| Stream Classification:<br><small>(check one)</small>   |                                  |  |   |  |
| <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |                                  |  |   |  |
| Waterbody Type:<br><small>(check one)</small>  |                                  |  |   |  |
| <input type="checkbox"/> River <input type="checkbox"/> Stream <input checked="" type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:  |                                  |  |   |  |
| OHWM<br><small>(check one)</small>   |                                  | OHWM Indicator:<br><small>(check all that apply)</small>   |   |  |
| Width: <u>4</u> ft.  |                                  | <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining   |   |  |
| Height: <u>0.5</u> ft.   |                                  | <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change |   |  |
| N/A <input type="checkbox"/>   |                                  |  |   |  |
| Width of Waterbody - Top of Bank to Top of Bank:<br><u>8</u> ft.   |                                  | Width of Waterbody - Toe of Slope to Toe of Slope:<br><u>4</u> ft.   |   | Width of Waterbody - Water Edge to Water Edge:<br><u>6</u> ft. |
|  |                                  |  |   | Depth of Water:<br><small>(Approx.)</small><br><u>0.5</u> ft.  |
| N/A <input type="checkbox"/>   |                                  | N/A <input type="checkbox"/>   |   | N/A <input type="checkbox"/>                                   |
| Sinuosity:<br><small>(check one)</small>   |                                  | Water velocity:<br><small>(Approx.)</small>  |   | Bank height  |
| <input checked="" type="checkbox"/> Straight   |                                  | <u>0</u> fps   |   | Right: <u>1</u> ft.  |
| <input type="checkbox"/> Meandering  |                                  | N/A <input type="checkbox"/>   |   | Left: <u>1</u> ft.   |
|  |                                  |  |   | Right: <u>60</u> degrees                                       |
|  |                                  |  |   | Left: <u>60</u> degrees  |
| <b>Qualitative Attributes</b>  |                                  |  |   |  |
| Water Appearance:<br><small>(check one)</small>  |                                  |  |   |  |
| <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:                |                                  |  |   |  |
| Substrate:<br><small>(check all that apply)</small>  |                                  |  |   |  |
| <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: |                                  |  |   |  |
| % of Substrate:    _____%    _____%    _____%    _____%    _____% <u>100</u> %    _____%   |                                  |  |   |  |
| Width of Riparian Zone:<br><u>20</u> ft.   |                                  | Vegetative Layers:<br><small>(check all that apply)</small>  |   |  |
| N/A <input type="checkbox"/>   |                                  | Avg. DBH of Dominants:<br><small>(approx.)</small>   |   |  |
|  |                                  | <input checked="" type="checkbox"/> Trees: <u>10</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>3</u> in. <input checked="" type="checkbox"/> Herbs: <u>N/A</u> in.   |   |  |
| Dominant Bank Vegetation (list):<br><u>Pinus taeda, Liquidambar styraciflua, Arundinaria gigantea</u>  |                                  |  |   |  |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br><u>None</u>   |                                  |  |   |  |
| Aquatic Organisms Observed (list):<br><u>None</u>  |                                  |  |   |  |
| T&E Species Observed (list):<br><u>None</u>  |                                  |  |   |  |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br><u>Waterline utility easement</u>  |                                  |  |   |  |
| Tributary is:<br><small>(check one)</small>  |                                  |  |   |  |
| <input type="checkbox"/> Natural <input checked="" type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated   |                                  |  |   |  |
| Stream Quality *:<br><small>(check one)</small>  |                                  |  |   |  |
| <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low  |                                  |  |   |  |

Waterbody ID:  
SSur008

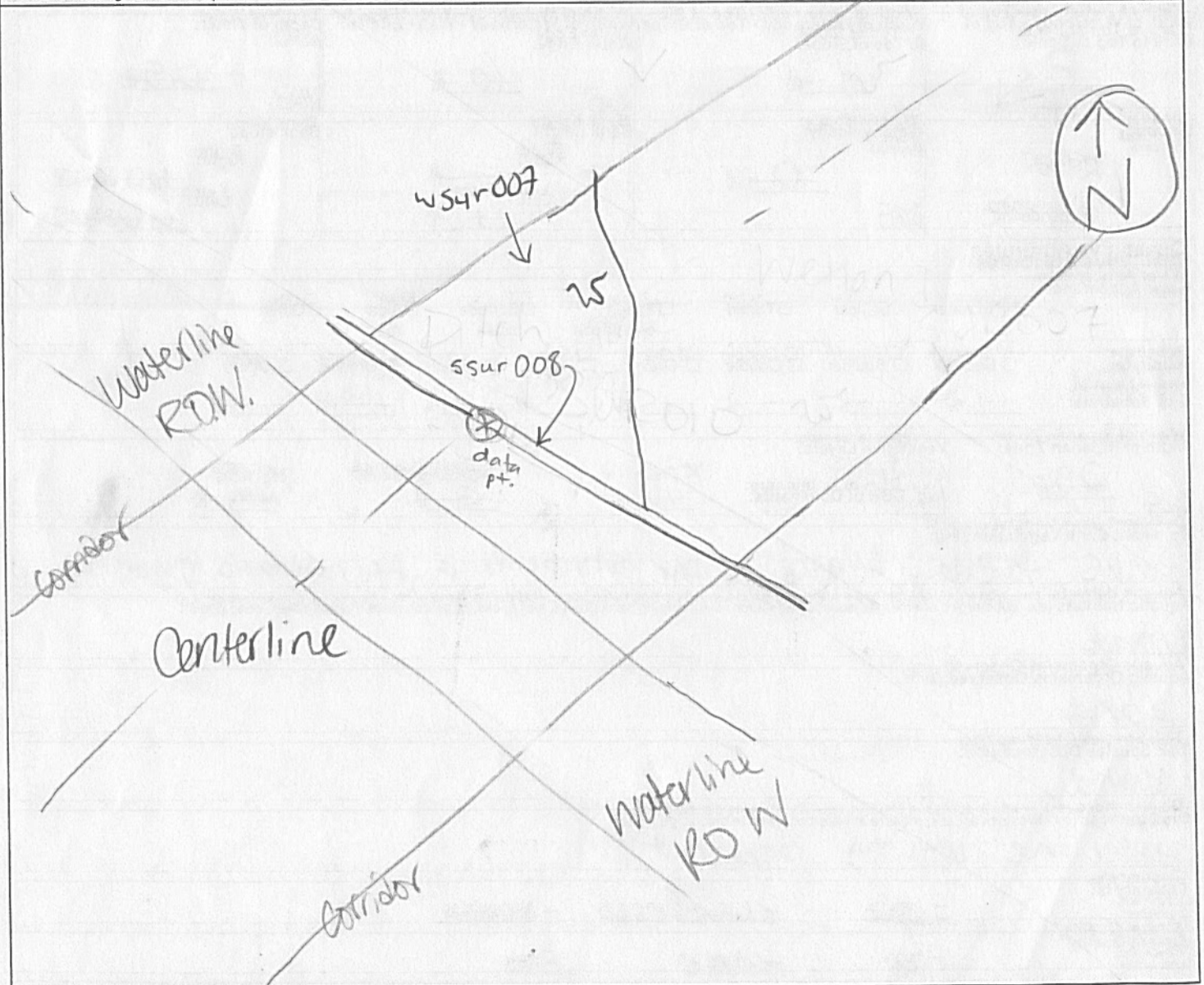
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssur008 facing southeast upstream.**



**Waterbody ssur008 facing west downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody ssur008 facing northeast across bank.**

# Linear Waterbody Data Sheet

|  |   |   |  |   |
|--|---|---|--|---|
| <b>Survey Description</b>  |   |   |  |   |
| Project Name:<br>ACP   |   | Waterbody Name:<br>UNT to Lake Cohoon   |  | Waterbody ID:<br>SSW0118                            |
| Date:<br>10/11/16  |   |   |  |   |
| State:<br>VA   | County/Parish:<br>Suffolk                                   | Company:<br>ESI   | Crew Member Initials:<br>RT, LR            | Photos:<br>Facing NW, SE, NE                        |
| Tract Number(s):<br>26-060-A029  |   | Nearest Milepost:<br>55.3   | Associated Wetland ID(s):<br>WSW045        |   |
| Survey Type:<br>(check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |   |   |  |   |
| <b>Physical Attributes</b>   |   |   |  |   |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |   |   |  |   |
| Waterbody Type:<br>(check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |   |   |  |   |
| OHWM Width:<br>3 ft.   |   | OHWM Indicator:<br>(check all that apply)   |  |   |
| Height:<br>2 ft.   |   | <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining<br><input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change |  |   |
| N/A <input type="checkbox"/>   |   |   |  |   |
| Width of Waterbody - Top of Bank to Top of Bank:<br>4 ft.  | Width of Waterbody - Toe of Slope to Toe of Slope:<br>3 ft. | Width of Waterbody - Water Edge to Water Edge:<br>3 ft.   | Depth of Water:<br>(Approx.)<br>1 ft.      |   |
| N/A <input type="checkbox"/>   |   | N/A <input type="checkbox"/>  |  |   |
| Sinuosity:<br>(check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   |   | Water velocity:<br>(Approx.)<br>1 fps   | Bank height<br>Right: 3 ft.<br>Left: 3 ft. | Bank slope<br>Right: 90 degrees<br>Left: 90 degrees |
| N/A <input type="checkbox"/>   |   | N/A <input type="checkbox"/>  |  |   |
| <b>Qualitative Attributes</b>  |   |   |  |   |
| Water Appearance:<br>(check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:                     |   |   |  |   |
| Substrate:<br>(check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: |   |   |  |   |
| % of Substrate: _____%    _____%    _____%    _____%    100%    _____%    _____%    _____%   |   |   |  |   |
| Width of Riparian Zone:<br>30 ft.  |   | Vegetative Layers:<br>(check all that apply)  |  |   |
| N/A <input type="checkbox"/>   |   | <input checked="" type="checkbox"/> Trees: 5 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 1 in. <input checked="" type="checkbox"/> Herbs: NA in.<br>Avg. DBH of Dominants:<br>(approx.)  |  |   |
| Dominant Bank Vegetation (list):<br>Ilex opaca, Liquidambar styraciflua, Arundinaria gigantea  |   |   |  |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br>submerged logs, overhanging roots, leaf packs   |   |   |  |   |
| Aquatic Organisms Observed (list):<br>none   |   |   |  |   |
| T&E Species Observed (list):<br>none   |   |   |  |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br>none   |   |   |  |   |
| Tributary is:<br>(check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |   |   |  |   |
| Stream Quality <sup>a</sup> :<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |   |   |  |   |

Waterbody ID:

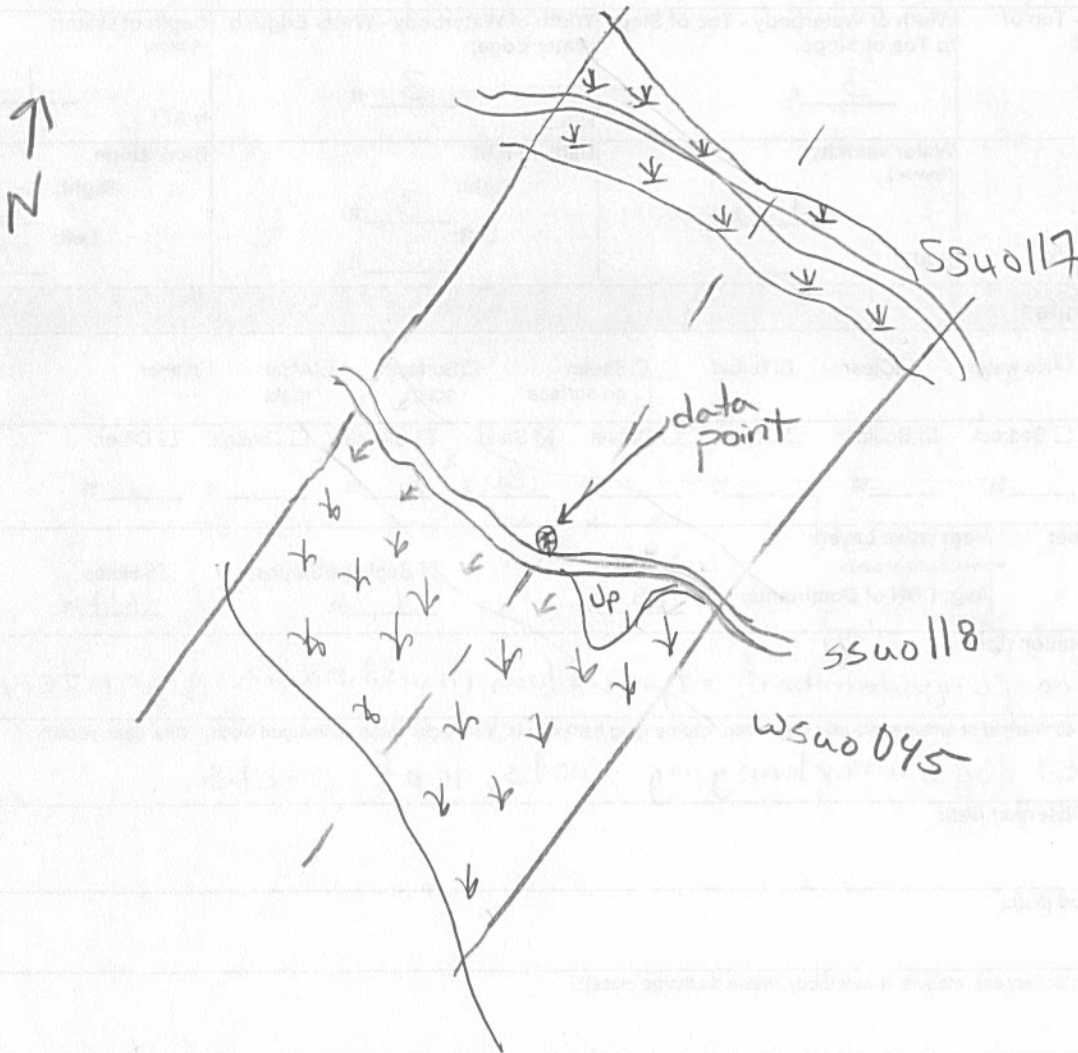
ssu0118

- **High Quality:** Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.
- Moderate Quality:** Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.
- Low Quality:** Rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

(Hurricane Matthew) Heavy rain within 72 hrs.  
[approx. 11"]

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point locations, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo118 facing northwest upstream.**



**Waterbody data point ssuo118 facing southeast downstream.**



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo118 facing northeast across bank.**

# Linear Waterbody Data Sheet

|   |  |  |   |                           |
|---|--|--|---|---------------------------|
| <b>Survey Description</b>   |  |  |   |                           |
| Project Name:<br>ACP  |  | Waterbody Name:<br>UNF to Lake Cohoon  |   | Date:<br>10/11/16         |
| State:<br>VA  | County/Parish:<br>Suffolk  | Company:<br>ESI  | Crew Member Initials:<br>RT, LR   | Photos:<br>Facing N, S, E |
| Tract Number(s):<br>26-060-A029   |  | Nearest Milepost:<br>55.4  | Associated Wetland ID(s):<br>WSU0044  |                           |
| Survey Type:<br><small>(check one)</small> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |  |  |   |                           |
| <b>Physical Attributes</b>  |  |  |   |                           |
| Stream Classification:<br><small>(check one)</small> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |  |  |   |                           |
| Waterbody Type:<br><small>(check one)</small> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |  |  |   |                           |
| OHWM<br>Width: <u>4</u> ft.<br>Height: <u>1</u> ft.<br>N/A <input type="checkbox"/>   |  | OHWM Indicator:<br><small>(check all that apply)</small> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining<br><input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change |   |                           |
| Width of Waterbody - Top of Bank to Top of Bank:<br><u>5</u> ft.  | Width of Waterbody - Toe of Slope to Toe of Slope:<br><u>3</u> ft.   | Width of Waterbody - Water Edge to Water Edge:<br><u>4</u> ft.<br>N/A <input type="checkbox"/>   | Depth of Water:<br><small>(Approx.)</small><br><u>1</u> ft.<br>N/A <input type="checkbox"/> |                           |
| Sinuosity:<br><small>(check one)</small> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   | Water velocity:<br><small>(Approx.)</small><br><u>1</u> fps<br>N/A <input type="checkbox"/>  | Bank height<br>Right: <u>2</u> ft.<br>Left: <u>2</u> ft.   | Bank slope<br>Right: <u>90</u> degrees<br>Left: <u>90</u> degrees                           |                           |
| <b>Qualitative Attributes</b>   |  |  |   |                           |
| Water Appearance:<br><small>(check one)</small> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:   |  |  |   |                           |
| Substrate:<br><small>(check all that apply)</small> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:<br>% of Substrate:    _____%    _____%    _____% <u>15</u> % <u>85</u> %    _____%    _____%    _____% |  |  |   |                           |
| Width of Riparian Zone:<br><u>50</u> ft.<br>N/A <input type="checkbox"/>  | Vegetative Layers:<br><small>(check all that apply)</small> <input checked="" type="checkbox"/> Trees: <u>9</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>1</u> in. <input checked="" type="checkbox"/> Herbs: <u>NA</u> in.<br>Avg. DBH of Dominants:<br><small>(approx.)</small> |  |   |                           |
| Dominant Bank Vegetation <small>(list)</small> :<br><u>Ligustrum sinenses, Smilax rotundifolia, Liquidambar styraciflua</u>   |  |  |   |                           |
| Aquatic Habitats <small>(ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools)</small> :<br><u>submerged wood</u>  |  |  |   |                           |
| Aquatic Organisms Observed <small>(list)</small> :<br><u>none</u>   |  |  |   |                           |
| T&E Species Observed <small>(list)</small> :<br><u>none</u>   |  |  |   |                           |
| Disturbances <small>(ex: livestock access, manure in waterbody, waste discharge pipes)</small> :<br><u>none</u>   |  |  |   |                           |
| Tributary is:<br><small>(check one)</small> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |  |  |   |                           |
| Stream Quality <sup>a</sup> :<br><small>(check one)</small> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low   |  |  |   |                           |

Waterbody ID:

SSuo 117

• **High Quality:** Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

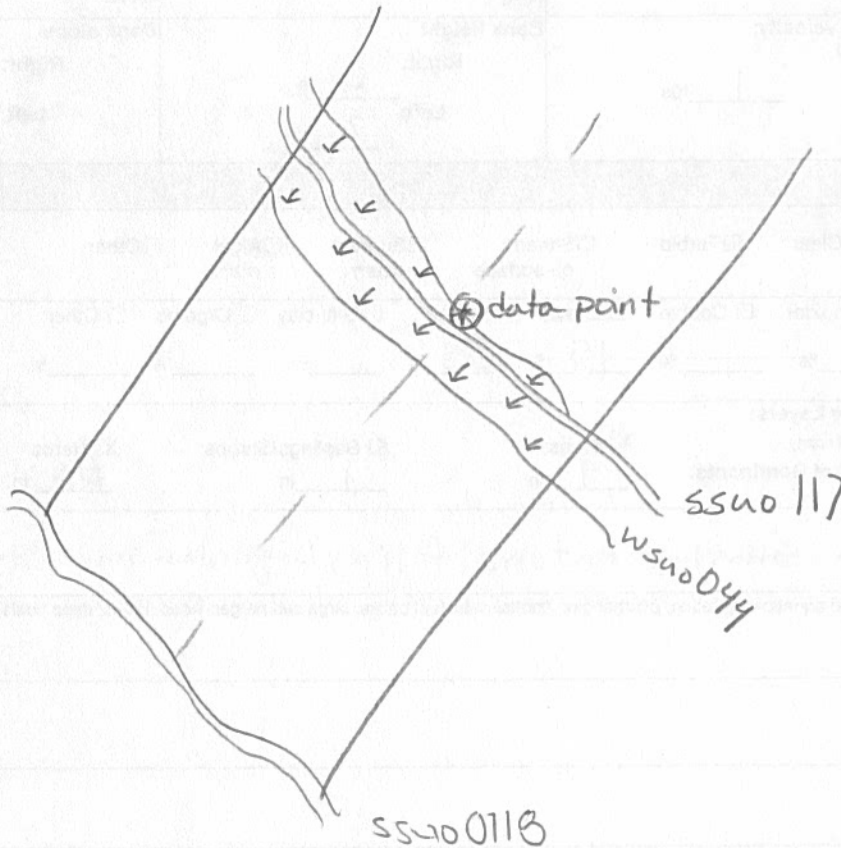
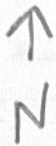
**Moderate Quality:** Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

(Hurricane Matthew) Heavy rain within 72hrs.  
[approx. 11"]

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point locations, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo117 facing north upstream.**



**Waterbody data point ssuo117 facing south downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssuo117 facing east across bank.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody dsup010 facing northwest upstream.**



**Waterbody dsup010 facing southeast downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody dsup010 facing southwest across bank.**

# Linear Waterbody Data Sheet

|  |  |  |   |
|--|--|--|---|
| <b>Survey Description</b>  |  |  |   |
| Project Name:<br><u>ACP</u>  | Waterbody Name:<br><u>UNT to Cohoon Creek</u>  | Waterbody ID:<br><u>SSUP 019</u>   | Date:<br><u>1/6/16</u>  |
| State:<br><u>VA</u>  | County/Parish:<br><u>Suffolk</u>   | Company:<br><u>ESI</u>   | Crew Member Initials:<br><u>MKS / NWM</u>                                   |
| Photos:<br><u>NE, SW, NW</u>   |  |  |   |
| Tract Number(s):<br><u>26-060-A031, 26-060-A032</u>  |  | Nearest Milepost:<br><u>56.2</u>   | Associated Wetland ID(s):<br><u>WSUP 032</u>                                |
| Survey Type:<br>(check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:  |  |  |   |
| <b>Physical Attributes</b>   |  |  |   |
| Stream Classification:<br>(check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial   |  |  |   |
| Waterbody Type:<br>(check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |  |  |   |
| OHWM<br>Width: <u>6</u> ft.<br>Height: <u>1.5</u> ft.<br>N/A <input type="checkbox"/>  |  | OHWM Indicator:<br>(check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining<br><input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change |   |
| Width of Waterbody - Top of Bank to Top of Bank:<br><u>7</u> ft.   | Width of Waterbody - Toe of Slope to Toe of Slope:<br><u>6</u> ft.   | Width of Waterbody - Water Edge to Water Edge:<br>N/A <input type="checkbox"/> <u>6</u> ft.  | Depth of Water:<br>(Approx.)<br>N/A <input type="checkbox"/> <u>1.5</u> ft. |
| Sinuosity:<br>(check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering   | Water velocity:<br>(Approx.)<br><u>1</u> fps<br>N/A <input type="checkbox"/>   | Bank height<br>Right: <u>3</u> ft.<br>Left: <u>4</u> ft.   | Bank slope<br>Right: <u>50</u> degrees<br>Left: <u>60</u> degrees           |
| <b>Qualitative Attributes</b>  |  |  |   |
| Water Appearance:<br>(check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other: |  |  |   |
| Substrate:<br>(check all that apply)<br>% of Substrate: _____% _____% _____% <u>10</u> % <u>80</u> % <u>30</u> % _____% _____%   |  |  |   |
| Width of Riparian Zone:<br><u>150</u> ft.<br>N/A <input type="checkbox"/>  | Vegetative Layers:<br>(check all that apply) <input checked="" type="checkbox"/> Trees: <u>12</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in. <input checked="" type="checkbox"/> Herbs: <u>NA</u> in. |  |   |
| Dominant Bank Vegetation (list): <u>Acer rubrum, Taxodium distichum, Nyssa biflora, Gelsemium sempervirens, Lonicera japonica, Ligustrum sinense</u>   |  |  |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br><u>pools, leaf packs, large submerged wood, overhanging roots,</u>  |  |  |   |
| Aquatic Organisms Observed (list):<br><u>Benthic macroinvertebrates</u>  |  |  |   |
| T&E Species Observed (list):<br><u>None</u>  |  |  |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br><u>Fill in floodplain, clearing in floodplain</u>  |  |  |   |
| Tributary Is:<br>(check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated  |  |  |   |
| Stream Quality*:<br>(check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low  |  |  |   |



Waterbody ID:  
ssup019

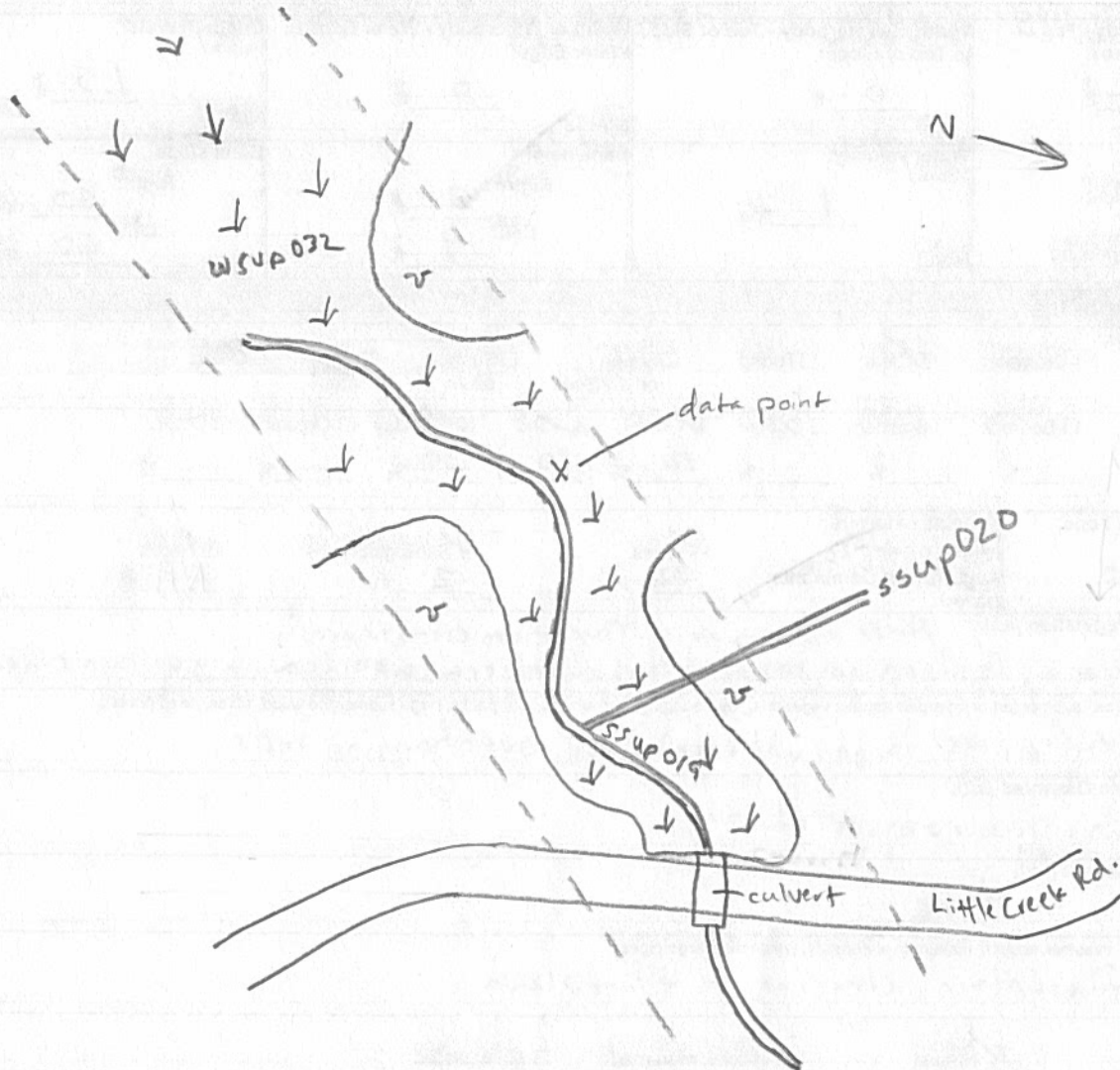
• **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssup019 facing northeast upstream.**



**Waterbody data point ssup019 facing southwest downstream.**

*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssup019 facing northwest across bank.**

# Linear Waterbody Data Sheet

| Survey Description  |                                  |  |   |  |   |
|---|----------------------------------|--|---|--|---|
| Project Name:<br><u>ACP</u>   |                                  | Waterbody Name:<br><u>UNT to Cohoon Creek</u>  |   | Waterbody ID:<br><u>SSUP023</u>                                  | Date:<br><u>1/6/16</u>  |
| State:<br><u>VA</u>   | County/Parish:<br><u>Suffolk</u> | Company:<br><u>ESI</u>   | Crew Member Initials:<br><u>MKS / NWM</u> | Photos:<br><u>NW, S, E</u>                                       |   |
| Tract Number(s):<br><u>26-060-A031</u>  |                                  | Nearest Milepost:<br><u>56.3</u>   |   | Associated Wetland ID(s):<br><u>WSUP033</u>                      |   |
| Survey Type:<br><small>(check one)</small>  |                                  |  |   |  |   |
| <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:   |                                  |  |   |  |   |
| Physical Attributes   |                                  |  |   |  |   |
| Stream Classification:<br><small>(check one)</small>  |                                  |  |   |  |   |
| <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial  |                                  |  |   |  |   |
| Waterbody Type:<br><small>(check one)</small>   |                                  |  |   |  |   |
| <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:   |                                  |  |   |  |   |
| OHWM Width:<br><u>0.5</u> ft.   |                                  | OHWM Indicator:<br><small>(check all that apply)</small>   |   |  |   |
| Height:<br><u>0.2</u> ft.   |                                  | <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining   |   |  |   |
| N/A <input type="checkbox"/>  |                                  | <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change |   |  |   |
| Width of Waterbody - Top of Bank to Top of Bank:<br><u>1.5</u> ft.  |                                  | Width of Waterbody - Toe of Slope to Toe of Slope:<br><u>1.0</u> ft.   |   | Width of Waterbody - Water Edge to Water Edge:<br><u>0.5</u> ft. | Depth of Water:<br><small>(Approx.)</small><br><u>0.2</u> ft. |
| N/A <input type="checkbox"/>  |                                  | N/A <input type="checkbox"/>   |   | N/A <input type="checkbox"/>                                     | N/A <input type="checkbox"/>                                  |
| Sinuosity:<br><small>(check one)</small>  |                                  | Water velocity:<br><small>(Approx.)</small>  |   | Bank height  | Bank slope  |
| <input checked="" type="checkbox"/> Straight<br><br><input type="checkbox"/> Meandering   |                                  | <u>&lt; 1</u> fps<br><br>N/A <input type="checkbox"/>  |   | Right: <u>3</u> ft.<br>Left: <u>1</u> ft.                        | Right: <u>75</u> degrees<br>Left: <u>45</u> degrees           |
| Qualitative Attributes  |                                  |  |   |  |   |
| Water Appearance:<br><small>(check one)</small>   |                                  |  |   |  |   |
| <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:                                       |                                  |  |   |  |   |
| Substrate:<br><small>(check all that apply)</small>   |                                  |  |   |  |   |
| <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: |                                  |  |   |  |   |
| % of Substrate:    _____%    _____%    _____%    _____% <u>20</u> % <u>70</u> % <u>10</u> %    _____%   |                                  |  |   |  |   |
| Width of Riparian Zone:<br><u>30</u> ft.  |                                  | Vegetative Layers:<br><small>(check all that apply)</small>  |   |  |   |
| N/A <input type="checkbox"/>  |                                  | <input type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs:  |   |  |   |
|   |                                  | Avg. DBH of Dominants:<br><small>(approx.)</small> _____ in. <u>3</u> in. <u>NA</u> in.  |   |  |   |
| Dominant Bank Vegetation <small>(list)</small> :<br><u>Lonicera japonica, Smilax rotundifolia, Ilex opaca, Arundinaria gigantea</u>   |                                  |  |   |  |   |
| Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools):<br><u>leaf packs</u>  |                                  |  |   |  |   |
| Aquatic Organisms Observed <small>(list)</small> :<br><u>None</u>   |                                  |  |   |  |   |
| T&E Species Observed <small>(list)</small> :<br><u>None</u>   |                                  |  |   |  |   |
| Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):<br><u>Agriculture runoff</u>   |                                  |  |   |  |   |
| Tributary Is:<br><small>(check one)</small>   |                                  |  |   |  |   |
| <input type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input checked="" type="checkbox"/> Manipulated  |                                  |  |   |  |   |
| Stream Quality *:<br><small>(check one)</small>   |                                  |  |   |  |   |
| <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low   |                                  |  |   |  |   |

Waterbody ID:

SSUP023

▪ **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

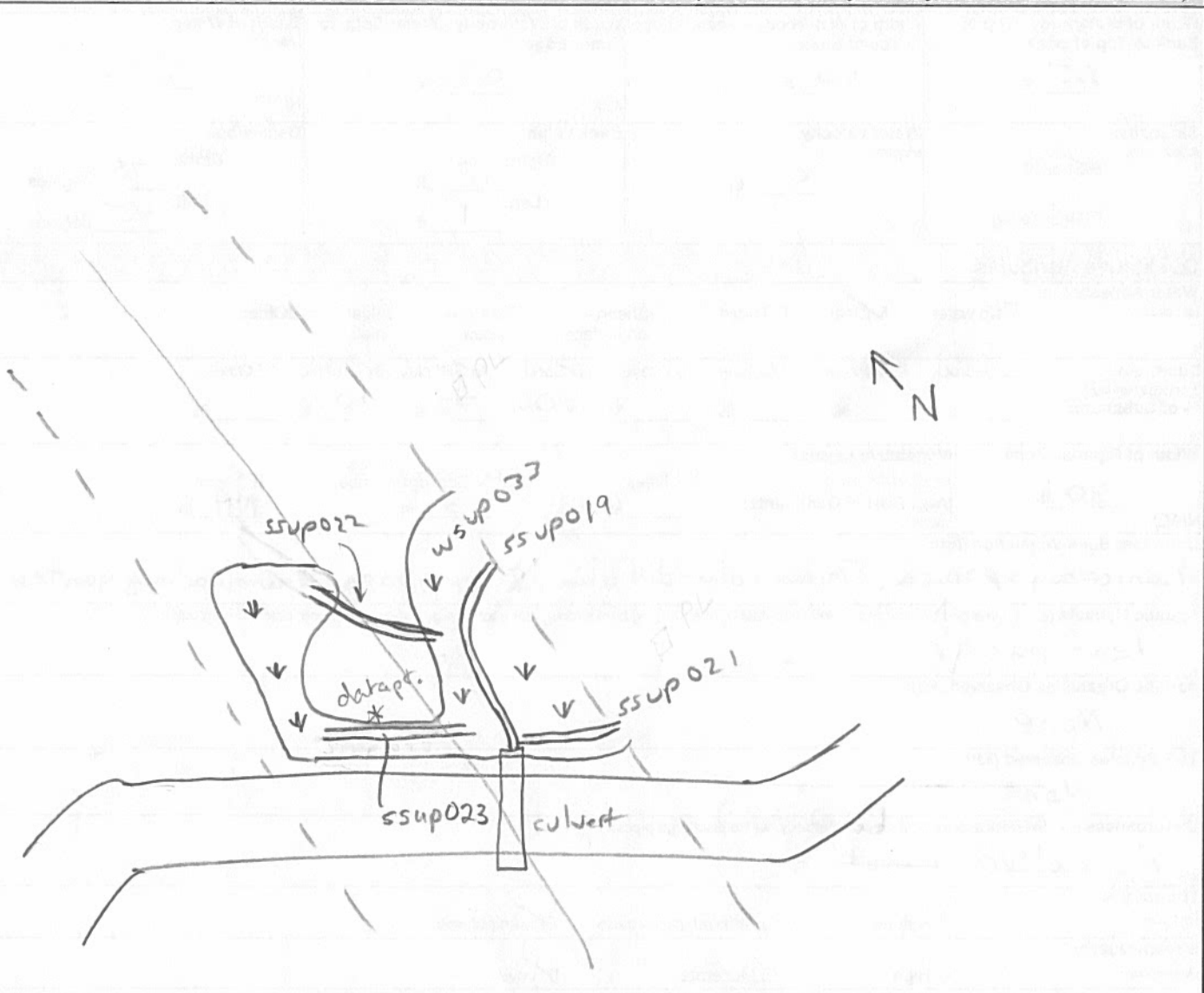
**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

**Low Quality:** Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

**Notes:**

Little to no aquatic habitat

**Waterbody Sketch** (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



*Environmental Field Surveys*  
*Waterbody Photo Page*



**Waterbody data point ssup023 facing northwest upstream.**



**Waterbody data point ssup023 facing south downstream.**