



Maine Department of Environmental Protection  
Biological Monitoring Program  
Aquatic Life Classification Attainment Report

Station Information

Station Number: S-425 DEP Drainage: Kennebec  
Waterbody: Mill Stream - Station 425 HUC8: 01030003  
Town: Embden HUC8 Name: Lower Kennebec  
Directions: 150M UPSTREAM OF HATCHERY DISCHARGE Latitude: 44 54 45.74 N  
Longitude: 69 56 25.21 W  
Stream Order: 3

Sample Information

Log Number: 2048 Type of Sample: ROCK BAG Date Deployed: 7/20/2011  
Subsample Factor: X1 Replicates: 3 Date Retrieved: 8/22/2011

Classification Attainment

Statutory Class: B Final Determination: B Date: 4/24/2012  
Model Result with P>.6: B Reason for Determination: Model  
Date Last Calculated: 4/23/2012 Comments:

Model Probabilities

| First Stage Model         |      |         |      | C or Better Model              |      |
|---------------------------|------|---------|------|--------------------------------|------|
| Class A                   | 0.19 | Class C | 0.24 | Class A, B, or C               | 1.00 |
| Class B                   | 0.57 | NA      | 0.00 | Non-Attainment                 | 0.00 |
| B or Better Model         |      |         |      | A Model                        |      |
| Class A or B              |      | 0.83    |      | Class A                        | 0.04 |
| Class C or Non-Attainment |      | 0.17    |      | Class B or C or Non-Attainment | 0.96 |

Model Variables

|                                                            |        |                                                                                                                 |       |
|------------------------------------------------------------|--------|-----------------------------------------------------------------------------------------------------------------|-------|
| 01 Total Mean Abundance                                    | 183.00 | 18 Relative Abundance Ephemeroptera                                                                             | 0.02  |
| 02 Generic Richness                                        | 37.00  | 19 EPT Generic Richness                                                                                         | 17.00 |
| 03 Plecoptera Mean Abundance                               | 5.67   | 21 Sum of Abundances: <i>Dicrotendipes</i> ,<br><i>Micropsectra</i> , <i>Parachironomus</i> , <i>Helobdella</i> | 0.00  |
| 04 Ephemeroptera Mean Abundance                            | 4.33   | 23 Relative Generic Richness- Plecoptera                                                                        | 0.08  |
| 05 Shannon-Wiener Generic Diversity                        | 3.94   | 25 Sum of Abundances: <i>Cheumatopsyche</i> ,<br><i>Cricotopus</i> , <i>Tanytarsus</i> , <i>Ablabesmyia</i>     | 63.40 |
| 06 Hilsenhoff Biotic Index                                 | 5.88   | 26 Sum of Abundances: <i>Acroneuria</i> ,<br><i>Maccaffertium</i> , <i>Stenonema</i>                            | 3.00  |
| 07 Relative Abundance - Chironomidae                       | 0.42   | 28 EP Generic Richness/14                                                                                       | 0.43  |
| 08 Relative Generic Richness Diptera                       | 0.32   | 30 Presence of Class A Indicator Taxa/7                                                                         | 0.14  |
| 09 <i>Hydropsyche</i> Abundance                            | 13.43  |                                                                                                                 |       |
| 11 <i>Cheumatopsyche</i> Abundance                         | 16.53  |                                                                                                                 |       |
| 12 EPT Generic Richness/ Diptera<br>Generic Richness       | 1.42   |                                                                                                                 |       |
| 13 Relative Abundance - Oligochaeta                        | 0.07   |                                                                                                                 |       |
| 15 Perlidae Mean Abundance (Family<br>Functional Group)    | 5.33   |                                                                                                                 |       |
| 16 Tanypodinae Mean Abundance<br>(Family Functional Group) | 4.02   |                                                                                                                 |       |
| 17 Chironomini Abundance (Family<br>Functional Group)      | 7.03   |                                                                                                                 |       |

| Five Most Dominant Taxa |                       |         |
|-------------------------|-----------------------|---------|
| Rank                    | Taxon Name            | Percent |
| 1                       | <i>Cricotopus</i>     | 25.61   |
| 2                       | <i>Oecetis</i>        | 11.66   |
| 3                       | <i>Cheumatopsyche</i> | 9.03    |
| 4                       | <i>Hydropsyche</i>    | 7.34    |
| 5                       | <i>Stylaria</i>       | 6.74    |



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Town: Embden

Date Deployed: 7/20/2011

**Log Number: 2048**

Waterbody: Mill Stream - Station 425

Date Retrieved: 8/22/2011

**Sample Collection and Processing Information**

Sampling Organization: BIOMONITORING UNIT

Taxonomist: LOTIC INC.

**Waterbody Information - Deployment**

Temperature: 26.4 deg C  
Dissolved Oxygen: 7.9 mg/l  
Specific Conductance: 21 uS/cm  
Velocity: 38 cm/s  
pH: 7.03  
Wetted Width: 5.2 m  
Bankfull Width: 8 m  
Depth: 25 cm

**Waterbody Information - Retrieval**

Temperature: 23.2 deg C  
Dissolved Oxygen: 8.8 mg/l  
Specific Conductance: 16 uS/cm  
Velocity: 33 cm/s  
pH: 7.2  
Wetted Width: 5.8 m  
Bankfull Width: 8 m  
Depth: 25 cm

**Water Chemistry**

**Summary of Habitat Characteristics**

Landuse Name

Swamp Conifer

Upland Conifer

Upland Hardwood

Potential Stressor

Lake Outlet

Canopy Cover

Partly Open

Location

Above Fish Hatchery

Lake Outlet

Terrain

Rolling

Substrate

Boulder 25 %

Gravel 5 %

Rubble/Cobble 70 %

**Landcover Summary - 2004 Data**

**Sample Comments**

7/20/11: FISH OBSERVED.

8/22/11: FISH AND ALGAE OBSERVED. HEAVY RAIN 8/21/11 PM AND 8/22/11 AM.



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Aquatic Life Taxonomic Inventory Report**

**Station Number: S-425**

Waterbody: Mill Stream - Station 425

Town: Embden

**Log Number: 2048**

Subsample Factor: X1

Replicates: 3

Calculated: 4/23/2012

| Taxon                                               | Maine<br>Taxonomic<br>Code | Count<br>(Mean of Samplers) |          | Hilsenhoff<br>Biotic<br>Index | Functional<br>Feeding<br>Group | Relative<br>Abundance |          |
|-----------------------------------------------------|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-----------------------|----------|
|                                                     |                            | Actual                      | Adjusted |                               |                                | Actual                | Adjusted |
| <i>Nais</i>                                         | 08020202009                | 0.33                        | 0.33     |                               | CG                             | 0.2                   | 0.2      |
| <i>Stylaria</i>                                     | 08020202014                |                             | 12.33    |                               | CG                             |                       | 6.7      |
| <i>Stylaria lacustris</i>                           | 08020202014002             | 12.33                       |          |                               | --                             | 6.7                   |          |
| <i>Pteronarcys</i>                                  | 09020205023                | 0.33                        | 0.33     | 0                             | SH                             | 0.2                   | 0.2      |
| <i>Acroneuria</i>                                   | 09020209042                | 1.00                        | 2.00     | 0                             | PR                             | 0.5                   | 1.1      |
| <i>Acroneuria abnormis</i>                          | 09020209042121             | 1.00                        |          | 0                             | PR                             | 0.5                   |          |
| <i>Paragnetina</i>                                  | 09020209049                | 3.33                        | 3.33     | 1                             | PR                             | 1.8                   | 1.8      |
| <i>Boyeria</i>                                      | 09020301004                |                             | 5.67     | 2                             | PR                             |                       | 3.1      |
| <i>Boyeria vinosa</i>                               | 09020301004012             | 5.67                        |          |                               | --                             | 3.1                   |          |
| <i>Calopteryx</i>                                   | 09020307043                | 3.00                        | 3.00     | 5                             | PR                             | 1.6                   | 1.6      |
| <i>Baetis</i>                                       | 09020401001                | 2.67                        | 2.67     | 4                             | CG                             | 1.5                   | 1.5      |
| <i>Maccaffertium</i>                                | 09020402015                | 1.00                        | 1.00     | 4                             | SC                             | 0.5                   | 0.5      |
| <i>Ephemerella</i>                                  | 09020410035                | 0.67                        | 0.67     | 1                             | CG                             | 0.4                   | 0.4      |
| <i>Chimarra</i>                                     | 09020601003                |                             | 0.67     | 2                             | CF                             |                       | 0.4      |
| <i>Chimarra obscura</i>                             | 09020601003003             | 0.67                        |          |                               | --                             | 0.4                   |          |
| <i>Neureclipsis</i>                                 | 09020603008                | 8.67                        | 8.67     | 7                             | CF                             | 4.7                   | 4.7      |
| Hydropsychidae                                      | 09020604                   | 1.00                        |          |                               | --                             | 0.5                   |          |
| <i>Cheumatopsyche</i>                               | 09020604015                | 16.00                       | 16.53    | 5                             | CF                             | 8.7                   | 9.0      |
| <i>Hydropsyche</i>                                  | 09020604016                | 13.00                       | 13.43    | 4                             | CF                             | 7.1                   | 7.3      |
| <i>Macrostemum</i>                                  | 09020604018                | 1.00                        | 1.03     | 3                             | CF                             | 0.5                   | 0.6      |
| <i>Rhyacophila</i>                                  | 09020605019                | 0.33                        | 0.33     | 2                             | PR                             | 0.2                   | 0.2      |
| Phryganeidae                                        | 09020608                   | 0.33                        | 0.33     |                               | --                             | 0.2                   | 0.2      |
| <i>Micrasema</i>                                    | 09020609044                | 0.33                        | 0.33     | 2                             | SH                             | 0.2                   | 0.2      |
| Limnephilidae                                       | 09020610                   | 0.33                        | 0.33     |                               | --                             | 0.2                   | 0.2      |
| <i>Triaenodes</i>                                   | 09020618077                | 0.33                        | 0.33     | 6                             | SH                             | 0.2                   | 0.2      |
| <i>Oecetis</i>                                      | 09020618078                | 21.33                       | 21.33    | 8                             | PR                             | 11.7                  | 11.7     |
| <i>Tipula</i>                                       | 09021001002                | 0.33                        | 0.33     | 4                             | SH                             | 0.2                   | 0.2      |
| Chironomidae                                        | 09021011                   | 0.33                        |          |                               | --                             | 0.2                   |          |
| <i>Nilotanytus</i>                                  | 09021011012                |                             | 2.01     | 6                             | PR                             |                       | 1.1      |
| <i>Nilotanytus fimbriatus</i>                       | 09021011012027             | 2.00                        |          |                               | --                             | 1.1                   |          |
| <i>Thienemannimyia</i>                              | 09021011020                |                             | 2.01     | 3                             | PR                             |                       | 1.1      |
| <i>Thienemannimyia/arctopolopia</i><br><i>group</i> | 09021011020041             | 2.00                        |          |                               | --                             | 1.1                   |          |
| <i>Corynoneura</i>                                  | 09021011036                | 0.33                        | 0.33     | 7                             | CG                             | 0.2                   | 0.2      |
| <i>Cricotopus</i>                                   | 09021011037                | 0.67                        | 46.87    | 7                             | SH                             | 0.4                   | 25.6     |
| <i>Cricotopus bicinctus</i>                         | 09021011037057             | 39.33                       |          |                               | --                             | 21.5                  |          |
| <i>Cricotopus sylvestris group</i>                  | 09021011037079             | 6.67                        |          |                               | SH                             | 3.6                   |          |
| <i>Orthocladius</i>                                 | 09021011050                | 0.33                        | 0.33     | 6                             | CG                             | 0.2                   | 0.2      |



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|                              |                                      |                       |
|------------------------------|--------------------------------------|-----------------------|
| <b>Station Number: S-425</b> | Waterbody: Mill Stream - Station 425 | Town: Embden          |
| <b>Log Number: 2048</b>      | Subsample Factor: X1                 | Replicates: 3         |
|                              |                                      | Calculated: 4/23/2012 |

| Taxon                         | Maine<br>Taxonomic<br>Code | Count<br>(Mean of Samplers) |          | Hilsenhoff<br>Biotic<br>Index | Functional<br>Feeding<br>Group | Relative<br>Abundance |          |
|-------------------------------|----------------------------|-----------------------------|----------|-------------------------------|--------------------------------|-----------------------|----------|
|                               |                            | Actual                      | Adjusted |                               |                                | Actual                | Adjusted |
| <i>Psectrocladius</i>         | 09021011056                | 10.33                       | 10.38    | 8                             | CG                             | 5.6                   | 5.7      |
| <i>Rheocricotopus</i>         | 09021011057                |                             | 1.00     | 6                             | CG                             |                       | 0.5      |
| <i>Rheocricotopus robacki</i> | 09021011057105             | 1.00                        |          |                               | --                             | 0.5                   |          |
| <i>Tvetenia</i>               | 09021011065                |                             | 2.01     | 5                             | CG                             |                       | 1.1      |
| <i>Tvetenia vitracies</i>     | 09021011065113             | 2.00                        |          |                               | --                             | 1.1                   |          |
| <i>Rheotanytarsus</i>         | 09021011072                | 4.67                        | 4.69     | 6                             | CF                             | 2.6                   | 2.6      |
| <i>Polypedilum</i>            | 09021011102                |                             | 7.03     | 6                             | SH                             |                       | 3.8      |
| <i>Polypedilum aviceps</i>    | 09021011102181             | 7.00                        |          |                               | --                             | 3.8                   |          |
| <i>Simulium</i>               | 09021012047                | 4.33                        | 4.33     | 4                             | CF                             | 2.4                   | 2.4      |
| <i>Dubiraphia</i>             | 09021113064                | 3.00                        | 3.00     | 6                             | --                             | 1.6                   | 1.6      |
| <i>Macronychus</i>            | 09021113065                | 1.67                        | 1.67     | 4                             | --                             | 0.9                   | 0.9      |
| Gastropoda                    | 1001                       | 1.00                        | 1.00     |                               | --                             | 0.5                   | 0.5      |
| Physidae                      | 10010202                   | 0.67                        | 0.67     |                               | SC                             | 0.4                   | 0.4      |
| <i>Ferrissia</i>              | 10010204035                | 0.67                        | 0.67     |                               | SC                             | 0.4                   | 0.4      |