



Water-Data Report 2010

**01400640 MILLSTONE RIVER NEAR GROVERS MILL, NJ**

RARITAN RIVER BASIN

LOCATION.--Lat 40°18'48", long 74°35'21" referenced to North American Datum of 1983, West Windsor Township, Mercer County, NJ, Hydrologic Unit 02030105, at bridge on Cranbury Road, 1.0 mi east of Grovers Mill, 1.4 mi southeast of Plainsboro, and 2.0 mi upstream from Cranbury Brook.

DRAINAGE AREA.--42.6 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--Miscellaneous measurements, water years 1959-65, 1971, 1986-88, 1992-93, 1995, 1998 to current year.

GAGE.--Staff gage.

REMARKS.--Flow includes some sewage effluent.

**DISCHARGE MEASUREMENTS  
WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

| <b>Date</b>  | <b>Discharge,<br/>in ft<sup>3</sup>/s</b> |
|--------------|-------------------------------------------|
| Nov 9, 2009  | 34.9                                      |
| Mar 10, 2010 | 76.9                                      |
| Jun 22, 2010 | 22.2                                      |
| Sep 15, 2010 | 11.0                                      |

## 01400640 MILLSTONE RIVER NEAR GROVERS MILL, NJ—Continued

## WATER-QUALITY RECORDS

PERIOD OF RECORD.--Water years 1999 to current year. Published as "at Grovers Mill" (station 01400650) 1976-95, 1997-98.

REMARKS.--Cooperative Network Site Descriptor: Agricultural Land Use Indicator, NJ Department of Environmental Protection Watershed Management Area 10.

COOPERATION.--Physical measurements and samples for laboratory analysis were collected in cooperation with the NJ Department of Environmental Protection. Determinations of dissolved ammonia, dissolved orthophosphate, and suspended residue were performed by the NJ Department of Health and Senior Services, Environmental and Chemical Laboratory. Analysis of the split and concurrent replicate samples was performed by the Laboratory Branch of the U.S. EPA, Region II, Division of Environmental Science and Assessment.

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

Part 1 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; cm, centimeter; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; μS/cm, microsiemens per centimeter; μg/L, micrograms per liter; <, less than; E, estimated]

| Date       | Sample start time | Medium name                      | Sample type       | Barometric pressure, mm Hg (00025) | Temperature, air, °C (00020) | Absorbance, UV, 254 nm, 1 cm path length, water, filtered, units per centimeter (50624) | Absorbance, UV, organic constituents, 280 nm, 1 cm path length, water, filtered, units per centimeter (61726) | Discharge, instantaneous, ft <sup>3</sup> /s (00061) |
|------------|-------------------|----------------------------------|-------------------|------------------------------------|------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|------------------------------------------------------|
| 11-09-2009 | 1100              | Surface water                    | Regular           | 772                                | 20.0                         | .149                                                                                    | .119                                                                                                          | 35                                                   |
| 03-10-2010 | 1030              | Surface water                    | Regular           | 762                                | 12.0                         | .066                                                                                    | .051                                                                                                          | 77                                                   |
| 06-22-2010 | 1100              | Surface water                    | Regular           | 764                                | 30.0                         | .130                                                                                    | .101                                                                                                          | 22                                                   |
| 09-15-2010 | 0920              | Surface water                    | Replicate         | 759                                | 18.0                         | .098                                                                                    | .075                                                                                                          | 11                                                   |
|            |                   |                                  | <i>Split</i>      |                                    |                              |                                                                                         |                                                                                                               |                                                      |
| 09-15-2010 | 0920              | <i>QC sample - Surface water</i> | <i>Replicate</i>  | --                                 | --                           | --                                                                                      | --                                                                                                            | --                                                   |
|            |                   |                                  | <i>Concurrent</i> |                                    |                              |                                                                                         |                                                                                                               |                                                      |
| 09-15-2010 | 0921              | <i>QC sample - Surface water</i> | <i>Replicate</i>  | --                                 | --                           | --                                                                                      | --                                                                                                            | --                                                   |

## 01400640 MILLSTONE RIVER NEAR GROVERS MILL, NJ—Continued

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

Part 2 of 5

[%, percent; ANC, acid neutralizing capacity; CaCO<sub>3</sub>, calcium carbonate; N, nitrogen; NTRU, nephelometric turbidity ratio unit; P, phosphorus; SiO<sub>2</sub>, silicon dioxide; cm, centimeter; ft<sup>3</sup>/s, cubic feet per second; mg/L, milligrams per liter; mm Hg, millimeters of mercury; nm, nanometers; °C, degrees Celsius; µS/cm, microsiemens per centimeter; µg/L, micrograms per liter; <, less than; E, estimated]

| Date       | Dissolved oxygen, water, unfiltered, mg/L (00300) | Dissolved oxygen, water, unfiltered, % saturation (00301) | pH, water, unfiltered, field, standard units (00400) | Specific conductance, water, unfiltered, µS/cm at 25 °C (00095) | Temperature, water, °C (00010) | Turbidity, water, unfiltered, broad band light source (400-680 nm), detectors at multiple angles including 90 +/- 30 degrees, ratiometric correction, NTRU (63676) | Dissolved solids dried at 180 °C, water, filtered, mg/L (70300) | Dissolved solids, water, filtered, sum of constituents, milligrams per liter (70301) | Hardness, water, mg/L as CaCO <sub>3</sub> (00900) |
|------------|---------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------|
| 11-09-2009 | 10.8                                              | 97                                                        | 6.7                                                  | 281                                                             | 10.7                           | 9.1                                                                                                                                                                | 159                                                             | 158                                                                                  | 69.7                                               |
| 03-10-2010 | 11.4                                              | 97                                                        | 6.6                                                  | 334                                                             | 8.0                            | 9.0                                                                                                                                                                | 216                                                             | E 175                                                                                | 53.4                                               |
| 06-22-2010 | 8.4                                               | 99                                                        | 6.8                                                  | 294                                                             | 23.7                           | 3.5                                                                                                                                                                | 173                                                             | E 164                                                                                | 68.9                                               |
| 09-15-2010 | 6.8                                               | 72                                                        | 7.1                                                  | 382                                                             | 17.6                           | 3.1                                                                                                                                                                | 214                                                             | 211                                                                                  | 96.5                                               |
| 09-15-2010 | --                                                | --                                                        | --                                                   | --                                                              | --                             | --                                                                                                                                                                 | 250                                                             | 214                                                                                  | 91.0                                               |
| 09-15-2010 | --                                                | --                                                        | --                                                   | --                                                              | --                             | --                                                                                                                                                                 | 240                                                             | 217                                                                                  | 91.0                                               |

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

Part 3 of 5

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| Date       | Suspended solids, water, unfiltered, mg/L (00530) | Calcium, water, filtered, mg/L (00915) | Magnesium, water, filtered, mg/L (00925) | Potassium, water, filtered, mg/L (00935) | Sodium, water, filtered, mg/L (00930) | ANC, water, unfiltered, fixed endpoint titration, (pH 4.5) laboratory, mg/L as CaCO <sub>3</sub> (90410) | Carbon (inorganic plus organic), suspended sediment, total, mg/L (00694) | Chloride, water, filtered, mg/L (00940) | Fluoride, water, filtered, mg/L (00950) | Inorganic carbon, suspended sediment, total, mg/L (00688) |
|------------|---------------------------------------------------|----------------------------------------|------------------------------------------|------------------------------------------|---------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------------------------------------|
| 11-09-2009 | 5                                                 | 13.9                                   | 8.47                                     | 4.90                                     | 21.5                                  | 26                                                                                                       | 3.93                                                                     | 38.7                                    | .19                                     | E .03                                                     |
| 03-10-2010 | 32                                                | 12.2                                   | 5.56                                     | 3.40                                     | 34.7                                  | 14                                                                                                       | .66                                                                      | 67.5                                    | .12                                     | < .06                                                     |
| 06-22-2010 | 6                                                 | 13.8                                   | 8.34                                     | 4.73                                     | 24.7                                  | 23                                                                                                       | .27                                                                      | 45.4                                    | .18                                     | < .06                                                     |
| 09-15-2010 | 3                                                 | 16.4                                   | 13.5                                     | 6.68                                     | 32.4                                  | 46                                                                                                       | E .11                                                                    | 50.9                                    | .34                                     | < .06                                                     |
| 09-15-2010 | < 10                                              | 15.0                                   | 13.0                                     | 6.30                                     | 32.0                                  | 46                                                                                                       | --                                                                       | 56.0                                    | .35                                     | --                                                        |
| 09-15-2010 | < 10                                              | 15.0                                   | 13.0                                     | 6.30                                     | 32.0                                  | 47                                                                                                       | --                                                                       | 57.0                                    | .35                                     | --                                                        |

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**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

Part 4 of 5

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| Date       | Silica,<br>water,<br>filtered,<br>mg/L as<br>SiO <sub>2</sub><br>(00955) | Sulfate,<br>water,<br>filtered,<br>mg/L<br>(00945) | Ammonia<br>plus<br>organic<br>nitrogen,<br>water,<br>filtered,<br>mg/L as N<br>(00623) | Ammonia<br>plus<br>organic<br>nitrogen,<br>water,<br>unfiltered,<br>mg/L as N<br>(00625) | Ammonia,<br>water,<br>filtered,<br>mg/L as N<br>(00608) | Nitrate<br>plus<br>nitrite,<br>water,<br>filtered,<br>mg/L as N<br>(00631) | Orthophos-<br>phate,<br>water,<br>filtered,<br>mg/L as P<br>(00671) | Particulate<br>nitrogen,<br>suspended<br>in water,<br>mg/L<br>(49570) | Phosphorus,<br>water,<br>filtered,<br>mg/L as P<br>(00666) |
|------------|--------------------------------------------------------------------------|----------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------------|------------------------------------------------------------|
| 11-09-2009 | 10.9                                                                     | 23.8                                               | .42                                                                                    | --                                                                                       | .088                                                    | 4.46                                                                       | .034                                                                | .35                                                                   | .045                                                       |
| 03-10-2010 | 7.3                                                                      | 23.1                                               | .27                                                                                    | --                                                                                       | .044                                                    | 2.83                                                                       | E .008                                                              | .07                                                                   | .011                                                       |
| 06-22-2010 | 7.1                                                                      | 21.5                                               | .38                                                                                    | --                                                                                       | E .010                                                  | 5.50                                                                       | --                                                                  | .04                                                                   | .046                                                       |
| 09-15-2010 | 6.9                                                                      | 27.0                                               | .37                                                                                    | --                                                                                       | .023                                                    | 6.71                                                                       | --                                                                  | < .03                                                                 | .092                                                       |
| 09-15-2010 | --                                                                       | 33.0                                               | E .38                                                                                  | E .39                                                                                    | < .050                                                  | 7.00                                                                       | .064                                                                | --                                                                    | .095                                                       |
| 09-15-2010 | --                                                                       | 33.0                                               | E .24                                                                                  | E .39                                                                                    | < .050                                                  | 7.10                                                                       | .065                                                                | --                                                                    | .099                                                       |

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2009 TO SEPTEMBER 2010**

Part 5 of 5

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| Date       | Phosphorus,<br>water,<br>unfiltered,<br>mg/L as P<br>(00665) | Total<br>nitrogen,<br>water,<br>filtered,<br>mg/L<br>(00602) | Total<br>nitrogen,<br>water,<br>unfiltered,<br>mg/L<br>(00600) | Boron,<br>water,<br>filtered,<br>μg/L<br>(01020) | Organic<br>carbon,<br>suspended<br>sediment,<br>total, mg/L<br>(00689) | Organic<br>carbon,<br>water,<br>filtered,<br>mg/L<br>(00681) |
|------------|--------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------|--------------------------------------------------------------|
| 11-09-2009 | .110                                                         | 4.9                                                          | 5.2                                                            | --                                               | 3.90                                                                   | 3.7                                                          |
| 03-10-2010 | .059                                                         | 3.1                                                          | 3.2                                                            | --                                               | .66                                                                    | 2.0                                                          |
| 06-22-2010 | .068                                                         | 5.9                                                          | 5.9                                                            | --                                               | .27                                                                    | 3.8                                                          |
| 09-15-2010 | .118                                                         | 7.1                                                          | < 7.1                                                          | --                                               | < .12                                                                  | 2.9                                                          |
| 09-15-2010 | .120                                                         | E 7.4                                                        | E 7.4                                                          | 80                                               | --                                                                     | 3.7                                                          |
| 09-15-2010 | .110                                                         | E 7.3                                                        | E 7.5                                                          | 80                                               | --                                                                     | 3.7                                                          |