

## Water-Data Report 2011

**01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ**

## RARITAN RIVER BASIN

LOCATION.--Lat 40°38'51", long 74°58'08" referenced to North American Datum of 1983, Union Township, Hunterdon County, NJ, Hydrologic Unit 02030105, on left bank downstream side of bridge on County Route 635 (Jutland Road), 0.2 mi south of Van Syckel, 0.8 mi north of Perryville, and 0.3 mi upstream from Spruce Run Reservoir.

DRAINAGE AREA.--11.8 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--Occasional low-flow measurements, water years 1973-77. July 1977 to current year.

REVISED RECORDS.--WDR NJ-89-1: 1978(P), 1979(P), 1980(P), 1981(P), 1982(P).

GAGE.--Water-stage recorder and crest-stage gage. Datum of gage is 280.25 ft above NGVD of 1929.

REMARKS.--Records fair. Several measurements of water temperature were made during the year. Satellite telemetry at station.

PEAK DISCHARGES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 400 ft<sup>3</sup>/s and (or) maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 1	0445	2,030	5.91
Dec 1	1415	449	2.77
Mar 6	2030	879	3.93
Mar 11	0015	684	3.45
Apr 16	2145	993	4.19
Apr 28	1315	550	3.17
May 19	1830	1,110	4.44
Aug 14	0230	650	3.38
Aug 28	0315	*2,370	*6.30
Sep 5	2245	766	3.67
Sep 6	1945	1,480	5.16
Sep 7	0715	628	3.31
Sep 8	0515	2,090	5.98
Sep 28	0545	1,740	5.55

## Water-Data Report 2011

**01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ—Continued**

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**  
**DAILY MEAN VALUES**

<b>Day</b>	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>
<b>1</b>	446	6.7	113	10	9.6	35	33	25	17	7.8	5.9	23
<b>2</b>	24	6.7	29	16	24	28	27	23	15	7.6	5.5	21
<b>3</b>	13	6.7	17	11	22	24	23	22	14	15	5.6	18
<b>4</b>	13	42	14	9.7	14	23	23	36	14	11	7.6	17
<b>5</b>	26	23	12	9.3	16	23	31	24	14	8.2	5.7	101
<b>6</b>	17	12	11	8.6	25	200	26	21	14	7.5	5.5	471
<b>7</b>	12	9.5	11	8.9	23	167	29	19	13	8.0	13	285
<b>8</b>	9.4	8.8	10	8.6	36	66	26	18	12	20	7.7	577
<b>9</b>	8.3	8.4	9.2	8.6	19	55	29	16	12	13	8.8	117
<b>10</b>	7.4	7.9	8.7	8.0	15	235	22	15	11	8.4	7.1	78
<b>11</b>	7.3	7.5	9.3	8.0	13	215	21	15	15	7.5	5.6	61
<b>12</b>	9.3	7.6	71	9.0	12	65	46	14	14	6.9	5.1	52
<b>13</b>	7.6	7.2	45	8.4	12	52	67	13	13	6.6	12	43
<b>14</b>	12	7.3	17	7.9	22	44	35	13	17	6.1	268	37
<b>15</b>	14	7.5	13	8.0	25	39	27	34	14	5.9	78	44
<b>16</b>	8.6	8.2	12	8.3	17	68	177	44	11	5.6	40	32
<b>17</b>	7.7	23	11	7.8	36	41	86	23	31	5.4	26	28
<b>18</b>	7.3	11	11	21	90	35	27	53	13	5.3	21	26
<b>19</b>	8.3	9.3	11	24	46	31	24	157	11	5.3	18	24
<b>20</b>	7.6	8.6	10	18	24	28	22	63	10	5.1	16	24
<b>21</b>	7.3	8.0	10	14	23	46	18	38	9.9	4.9	33	24
<b>22</b>	6.9	7.8	10	11	19	42	16	31	9.9	4.6	29	33
<b>23</b>	6.7	8.0	9.9	9.4	17	61	40	33	11	4.4	18	90
<b>24</b>	6.7	7.7	9.5	8.1	17	65	32	44	34	4.5	15	87
<b>25</b>	6.7	8.7	9.3	9.1	151	44	28	26	19	27	17	32
<b>26</b>	7.1	11	9.2	10	44	35	18	23	12	12	16	26
<b>27</b>	9.6	8.8	9.9	11	33	31	36	23	10	7.1	42	24
<b>28</b>	8.5	8.0	9.3	10	62	30	89	21	9.5	6.4	807	323
<b>29</b>	7.3	7.7	9.4	9.9	---	27	35	19	9.2	11	65	140
<b>30</b>	7.0	8.4	8.8	9.8	---	25	27	25	8.5	8.0	37	61
<b>31</b>	7.0	---	9.3	9.2	---	25	---	18	---	6.1	28	---
<b>Total</b>	746.6	313.0	549.8	330.6	866.6	1,905	1,140	949	418.0	262.2	1,669.1	2,919
<b>Mean</b>	24.1	10.4	17.7	10.7	30.9	61.5	38.0	30.6	13.9	8.46	53.8	97.3
<b>Max</b>	446	42	113	24	151	235	177	157	34	27	807	577
<b>Min</b>	6.7	6.7	8.7	7.8	9.6	23	16	13	8.5	4.4	5.1	17
<b>Cfsm</b>	2.04	0.88	1.50	0.90	2.62	5.21	3.22	2.59	1.18	0.72	4.56	8.25
<b>In.</b>	2.35	0.99	1.73	1.04	2.73	6.01	3.59	2.99	1.32	0.83	5.26	9.20

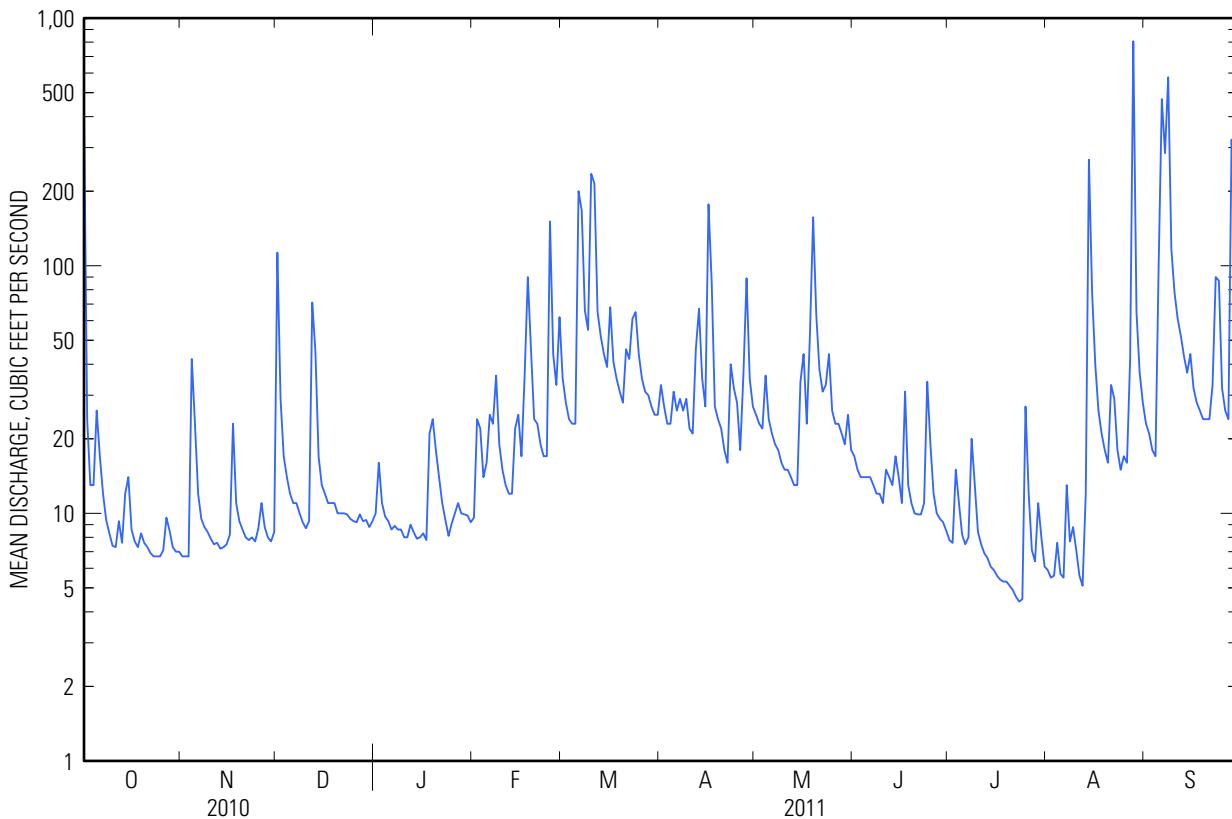
**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1977 - 2011, BY WATER YEAR (WY)**

	<b>Oct</b>	<b>Nov</b>	<b>Dec</b>	<b>Jan</b>	<b>Feb</b>	<b>Mar</b>	<b>Apr</b>	<b>May</b>	<b>Jun</b>	<b>Jul</b>	<b>Aug</b>	<b>Sep</b>
<b>Mean</b>	14.1	16.6	23.8	23.5	24.3	33.4	33.7	24.8	17.6	13.2	10.6	12.4
<b>Max</b>	40.9	32.6	77.9	79.2	56.7	76.8	94.1	59.2	61.1	53.2	53.8	97.3
(WY)	(2006)	(1986)	(1997)	(1979)	(2008)	(1994)	(1984)	(1984)	(1989)	(1984)	(2011)	(2011)
<b>Min</b>	3.54	4.04	3.95	5.01	5.26	10.2	6.88	10.0	4.62	1.98	2.79	2.18
(WY)	(2002)	(2002)	(1999)	(1981)	(2002)	(1985)	(1985)	(1995)	(1999)	(1999)	(1995)	(2005)

**01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ—Continued****SUMMARY STATISTICS**

	<b>Calendar Year 2010</b>	<b>Water Year 2011</b>		<b>Water Years 1977 - 2011</b>	
<b>Annual total</b>	7,857.6		12,068.9		
<b>Annual mean</b>	21.5		33.1		20.7
<b>Highest annual mean</b>				35.2	1984
<b>Lowest annual mean</b>				8.67	2002
<b>Highest daily mean</b>	454	Mar 13	807	Aug 28	918 Sep 16, 1999
<b>Lowest daily mean</b>	2.5	Sep 8	4.4	Jul 23	1.1 Aug 2, 1999
<b>Annual seven-day minimum</b>	2.6	Sep 5	4.9	Jul 18	1.2 Aug 1, 1999
<b>Maximum peak flow</b>			2,370	Aug 28	<sup>a</sup> 3,590 Sep 20, 1989
<b>Maximum peak stage</b>			6.30	Aug 28	7.41 Sep 20, 1989
<b>Instantaneous low flow</b>			4.0	Jul 22-24	1.0 Aug 2, 1999
<b>Annual runoff (cfsm)</b>	1.82		2.80		1.75
<b>Annual runoff (inches)</b>	24.77		38.05		23.81
<b>10 percent exceeds</b>	41		61		39
<b>50 percent exceeds</b>	11		15		12
<b>90 percent exceeds</b>	4.0		7.3		4.3

<sup>a</sup> From rating curve extended above 2,400 ft<sup>3</sup>/s.



**01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ—Continued****WATER-QUALITY RECORDS**

PERIOD OF RECORD.--Water years 1976 to current year.

PERIOD OF DAILY RECORD.--

DISSOLVED OXYGEN: July 2003.

DISSOLVED OXYGEN, PERCENT OF SATURATION: July 2003.

PH: July 2003.

SPECIFIC CONDUCTANCE: July 2003.

WATER TEMPERATURE: April 1997 - October 1998, July 2003.

REMARKS.--Cooperative Network Site Descriptor: Undeveloped Land Use Indicator, NJ Department of Environmental Protection Watershed Management Area 8.

COOPERATION.--Samples were collected in cooperation with the NJ Water Supply Authority. Physical measurements and samples for laboratory analyses on September 6, 2011 were provided by personnel of the NJ Department of Environmental Protection. Determination of concentrations of ammonia in filtered water was performed by the NJ Department of Health and Senior Services, Environmental and Chemical Laboratory (DHSS-ECL) except during the period May 12 through August 25, 2011 when the determination was performed by the National Water-Quality Laboratory. Determination of concentrations of suspended solids in unfiltered water was performed by the DHSS-ECL except during the period June 17 through August 25, 2011 when samples could not be accepted.

**WATER-QUALITY DATA  
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

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]

Date	Sample start time	Barometric pressure, mm Hg (00025)	Tempera-ture, air, °C (00020)	filtered, units per centimeter (50624)	Absorbance, UV, organic	Absorbance, UV, 254 nm, 1 constituents, cm path length, water, filtered, units	280 nm, 1 cm path length, water, filtered, units	Discharge, instantane-ous, ft <sup>3</sup> /s	Dissolved oxygen, water, unfiltered, mg/L (00061)	Dissolved oxygen, water, unfiltered, mg/L (00300)	pH, water, unfiltered, % saturation (00301)	pH, water, unfiltered, standard units (00400)
11-16-2010	0920	754	12.0	.038	.030	7.8	11.8	104	7.8			
02-09-2011	1040	758	-4.0	.073	.056	25	14.9	104	7.5			
05-03-2011	1040	755	18.5	.053	.040	23	11.0	106	7.6			
09-06-2011	1000	752	17.5	.306	.241	186	7.7	83	7.5			

**01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ—Continued**

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

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]

Date	Sample start time	Turbidity, water, unfiltered, broad band light source				Dissolved				Suspended	
		Specific conductance, water, unfiltered, µS/cm at 25 °C (00095)	Temperature, water, °C (00010)	Including 90 +/- 30 degrees, ratiometric correction, NTRU (63676)	Dissolved solids detectors at multiple angles	Dissolved solids dried at 180 °C, water, filtered, mg/L (70300)	Solids, water, filtered, sum of constituents, mg/L (70301)	Hardness, water, mg/L as CaCO <sub>3</sub> (00900)	Solids, water, unfiltered, mg/L (00530)	Calcium, water, filtered, mg/L (00915)	
11-16-2010	0920	284	9.6	.5	158	158	106	9	27.4		
02-09-2011	1040	758	.6	2.7	417	389	103	4	27.7		
05-03-2011	1040	245	13.7	1.4	148	139	76.9	--	20.2		
09-06-2011	1000	157	18.2	--	107	87	41.6	51	11.1		

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Part 3 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]

Date	Sample start time	ANC, water, unfiltered, fixed endpoint (inorganic)				Carbon				Inorganic carbon, suspended sediment, total, mg/L (00688)	Silica, water, filtered, mg/L as SiO <sub>2</sub> (00955)
		Magnesium, water, filtered, mg/L (00925)	Potassium, water, filtered, mg/L (00935)	Sodium, water, filtered, mg/L (00930)	Laboratory titration, mg/L as CaCO <sub>3</sub> (90410)	plus organic, suspended sediment, total, mg/L (00694)	Chloride, water, filtered, mg/L (00940)	Fluoride, water, filtered, mg/L (00950)			
11-16-2010	0920	9.24	1.43	13.8	75	.06	31.4	.07	<.03	12.0	
02-09-2011	1040	8.28	1.71	99.1	50	.19	192	.06	.04	11.1	
05-03-2011	1040	6.43	1.30	16.9	48	.20	35.5	.05	.04	13.3	
09-06-2011	1000	3.38	2.04	12.1	38	1.17	17.1	.05	<.03	9.3	

**01396660 MULHOCKAWAY CREEK AT VAN SYCKEL, NJ—Continued**

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Part 4 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]

Date	Sample start time	Ammonia plus organic		Nitrate plus nitrite		Orthophosphate, water, filtered	Particulate nitrogen, suspended in water,	Phosphorus, water, filtered	Phosphorus, water, unfiltered
		Sulfate, water, filtered	nitrogen, water, filtered	Ammonia, water, filtered	mg/L as N (00623)	mg/L as N (00608)	mg/L as N (00631)	mg/L as P (00671)	mg/L (49570)
11-16-2010	0920	14.6	.06	<.010	.77	.010	.02	.005	.007
02-09-2011	1040	15.5	.17	<.010	.80	.009	<.02	.008	.015
05-03-2011	1040	13.7	.12	<.010	.80	.014	.02	.009	.013
09-06-2011	1000	7.43	.45	.023	.41	.034	.15	.052	.128

**WATER-QUALITY DATA**  
**WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Part 5 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]

Date	Sample start time	Total nitrogen, water, filtered	Total nitrogen, water, unfiltered	Boron, water, filtered	Organic carbon, suspended sediment, total, mg/L	Organic carbon, water, filtered
		mg/L (00602)	mg/L (00600)	µg/L (01020)	mg/L (00689)	mg/L (00681)
11-16-2010	0920	.83	.85	10	<.12	1.3
02-09-2011	1040	.97	<.99	--	.15	2.3
05-03-2011	1040	.91	.94	--	.17	1.7
09-06-2011	1000	.86	1.0	--	1.17	7.2