

## Water-Data Report 2011

**01483155 SILVER LAKE TRIBUTARY AT MIDDLETOWN, DE**

Lower Delaware Basin  
Brandywine-Christina Subbasin

LOCATION.--Lat 39°25'50.8", long 75°43'21.5" referenced to North American Datum of 1983, New Castle County, DE, Hydrologic Unit 02040205, on right bank just downstream from bridge on State Road 71, at Middletown, 0.5 mi upstream of Silver Lake.

DRAINAGE AREA.--2.00 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--April 2001 to current year.

REVISED RECORDS.--WDR-US-2010: 2001-2009.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 20 ft above National Geodetic Vertical Datum of 1929, from topographic map.

REMARKS.--No estimated daily discharges. Records fair except those above 150 ft<sup>3</sup>/s which are poor. Occasional regulation at low and medium flows for irrigation upstream from station during some years. U.S. Geological Survey satellite collection platform at station. Several measurements of water temperature were made during the year.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 50 ft<sup>3</sup>/s and (or) maximum (\*):

Date	Time	Discharge (ft <sup>3</sup> /s)	Gage height (ft)
Oct 1	0100	299	4.03
Jul 8	1830	116	2.85
Jul 25	2130	93	2.62
Aug 14	0600	249	3.74
Aug 14	1315	218	3.57
Aug 27	2215	*398	*4.64

Minimum discharge, 0.91 ft<sup>3</sup>/s, July 15-18.

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## 01483155 SILVER LAKE TRIBUTARY AT MIDDLETOWN, DE—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>	86	2.3	3.6	2.3	2.1	3.1	3.3	2.8	1.5	1.4	1.6	5.6
<b>2</b>	6.8	2.4	2.9	2.4	5.9	2.8	3.2	2.7	1.7	1.6	1.7	5.3
<b>3</b>	4.4	2.3	2.5	2.4	6.0	2.7	3.0	2.9	1.6	1.9	1.8	5.1
<b>4</b>	4.4	5.1	2.4	2.3	4.2	2.5	2.9	3.7	1.5	1.7	1.9	4.9
<b>5</b>	3.9	3.8	2.4	2.3	4.5	2.6	3.7	3.3	1.6	1.3	1.8	4.9
<b>6</b>	3.2	2.8	2.4	2.3	8.0	4.1	3.4	3.0	1.7	1.3	1.8	7.9
<b>7</b>	3.0	2.5	2.4	2.2	4.7	5.4	3.3	3.1	2.4	1.4	1.8	8.8
<b>8</b>	2.8	2.4	2.3	2.2	3.5	3.2	3.9	3.0	1.8	17	1.8	6.5
<b>9</b>	2.6	2.4	2.3	2.1	2.8	2.9	4.2	2.9	1.2	5.2	1.8	5.4
<b>10</b>	2.6	2.4	2.3	2.1	2.6	3.7	3.6	2.9	1.4	1.8	1.2	4.8
<b>11</b>	2.5	2.4	2.3	2.0	2.4	4.3	3.2	2.9	1.4	1.7	1.4	4.7
<b>12</b>	2.5	2.3	3.0	2.1	2.5	3.3	3.7	2.9	1.9	1.7	1.9	5.0
<b>13</b>	2.5	2.4	3.3	2.0	2.5	3.0	4.2	2.8	2.3	1.7	4.0	4.4
<b>14</b>	3.0	2.4	2.6	1.9	2.6	2.8	3.7	3.0	2.3	1.5	106	4.4
<b>15</b>	2.8	2.4	2.3	1.9	2.5	2.8	3.3	3.6	2.3	1.1	13	4.3
<b>16</b>	2.6	2.5	2.3	1.9	2.4	4.1	6.7	3.6	1.8	1.2	5.5	4.3
<b>17</b>	2.6	2.7	2.3	1.9	2.3	3.2	8.6	3.4	1.5	0.97	3.5	4.2
<b>18</b>	2.6	2.7	2.3	2.8	2.3	2.9	4.2	3.2	1.6	0.96	3.1	4.2
<b>19</b>	3.2	2.6	2.3	2.6	2.4	3.1	3.5	3.0	1.6	1.3	6.7	4.2
<b>20</b>	2.8	2.6	2.3	2.3	2.5	2.9	3.4	3.1	1.4	1.6	6.3	4.3
<b>21</b>	2.7	2.5	2.3	2.1	2.5	2.9	3.3	3.0	1.5	1.5	4.8	4.3
<b>22</b>	2.6	2.5	2.3	2.1	2.8	3.0	3.2	2.7	2.3	1.4	3.7	4.3
<b>23</b>	2.4	2.5	2.3	2.0	2.6	3.6	3.4	2.7	2.4	1.0	3.0	17
<b>24</b>	2.4	2.5	2.3	2.0	2.5	4.3	3.4	2.7	2.3	1.2	2.9	9.5
<b>25</b>	2.3	2.6	2.3	2.0	4.4	3.3	3.5	2.6	1.8	9.6	9.0	5.7
<b>26</b>	2.4	2.5	2.3	2.5	3.1	3.0	3.1	2.4	1.6	3.1	4.9	4.9
<b>27</b>	3.8	2.5	2.4	3.1	2.7	3.2	3.0	1.8	1.7	1.6	74	4.5
<b>28</b>	2.7	2.5	2.3	2.4	3.0	3.0	3.7	2.0	1.6	1.7	117	4.5
<b>29</b>	2.5	2.4	2.3	2.2	---	2.9	3.4	2.5	1.4	1.9	10	4.6
<b>30</b>	2.4	2.4	2.3	2.2	---	2.9	3.0	2.4	1.3	1.7	7.2	4.4
<b>31</b>	2.3	---	2.2	2.2	---	3.0	---	1.8	---	1.7	6.2	---
<b>Total</b>	175.3	78.3	75.8	68.8	92.3	100.5	112.0	88.4	52.4	74.73	411.3	166.9
<b>Mean</b>	5.65	2.61	2.45	2.22	3.30	3.24	3.73	2.85	1.75	2.41	13.3	5.56
<b>Max</b>	86	5.1	3.6	3.1	8.0	5.4	8.6	3.7	2.4	17	117	17
<b>Min</b>	2.3	2.3	2.2	1.9	2.1	2.5	2.9	1.8	1.2	0.96	1.2	4.2
<b>Cfsm</b>	2.83	1.30	1.22	1.11	1.65	1.62	1.87	1.43	0.87	1.21	6.63	2.78
<b>In.</b>	3.26	1.46	1.41	1.28	1.72	1.87	2.08	1.64	0.97	1.39	7.65	3.10

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2001 - 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>	2.70	2.69	2.94	2.58	3.36	3.68	3.19	2.90	2.83	2.83	3.23	2.98
<b>Max</b>	5.65	4.77	5.67	5.67	6.88	8.53	6.99	4.08	5.81	6.18	13.3	5.56
(WY)	(2011)	(2007)	(2010)	(2007)	(2004)	(2003)	(2007)	(2010)	(2003)	(2006)	(2011)	(2011)
<b>Min</b>	1.29	1.50	1.80	1.38	1.17	1.10	1.01	1.16	0.85	0.76	0.96	1.17
(WY)	(2009)	(2009)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)	(2002)

**01483155 SILVER LAKE TRIBUTARY AT MIDDLETON, DE—Continued****SUMMARY STATISTICS**

	<b>Calendar Year 2010</b>		<b>Water Year 2011</b>		<b>Water Years 2001 - 2011</b>	
<b>Annual total</b>	1,264.0		1,496.73			
<b>Annual mean</b>	3.46		4.10		3.01	
<b>Highest annual mean</b>					4.10	2011
<b>Lowest annual mean</b>					1.21	2002
<b>Highest daily mean</b>	86	Oct 1	117	Aug 28	117	Aug 28, 2011
<b>Lowest daily mean</b>	1.0	Jul 6	0.96	Jul 18	0.63	Jun 30, 2002 <sup>a</sup>
<b>Annual seven-day minimum</b>	1.5	Jul 3	1.2	Jul 14	0.65	Jun 29, 2002
<b>Maximum peak flow</b>			398	Aug 27	b398	Aug 27, 2011
<b>Maximum peak stage</b>				4.64 Aug 27	4.64	Aug 27, 2011
<b>Instantaneous low flow</b>				0.91 Jul 15 <sup>c</sup>	0.52	Jul 3, 2002
<b>Annual runoff (cfsm)</b>	1.73		2.05			1.51
<b>Annual runoff (inches)</b>	23.51		27.84			20.46
<b>10 percent exceeds</b>	4.6		4.9			4.2
<b>50 percent exceeds</b>	2.7		2.6			2.4
<b>90 percent exceeds</b>	1.8		1.7			1.2

<sup>a</sup> June 30, July 2, 3, 7, 8, 2002.<sup>b</sup> From rating curve extended above 170 ft<sup>3</sup>/s.<sup>c</sup> July 15-18.