

# **APPENDIX J**

## **CONNECTICUT RIVER ASHUELOT RIVER- VERNON DAM TO MILLERS RIVER WATERSHED**

(HUC8: 01080201)

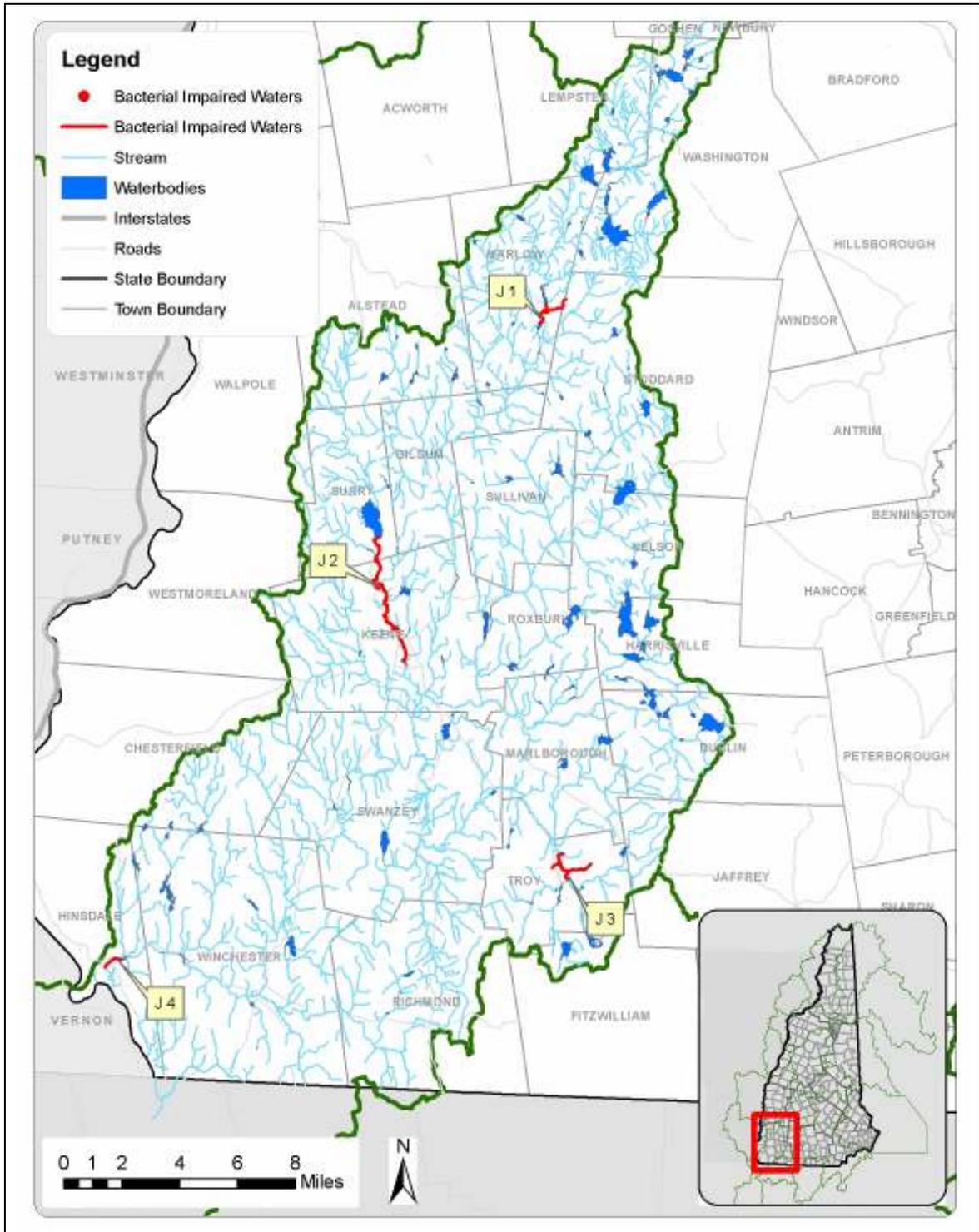
### **I. WATERSHED DESCRIPTION AND MAPS**

This section of the Connecticut River Watershed covers an area of approximately 480 square miles in the southwest corner of New Hampshire. The watershed extends into Vermont and Massachusetts as well. There are 25 New Hampshire towns located at least partially within the watershed which stretches from Goshen, NH to Gill, MA. As shown in Figure 1, the primary watercourse in the region is the Ashuelot River which flows southwest through Keene, NH before bending west to join the Connecticut River on the Vermont border in Hinsdale. Franconia Mountain Range is located in this watershed along with many independent mountains. Aquatic features in this watershed are Silver Lake, Surry Mountain Lake, and Ashuelot Pond.

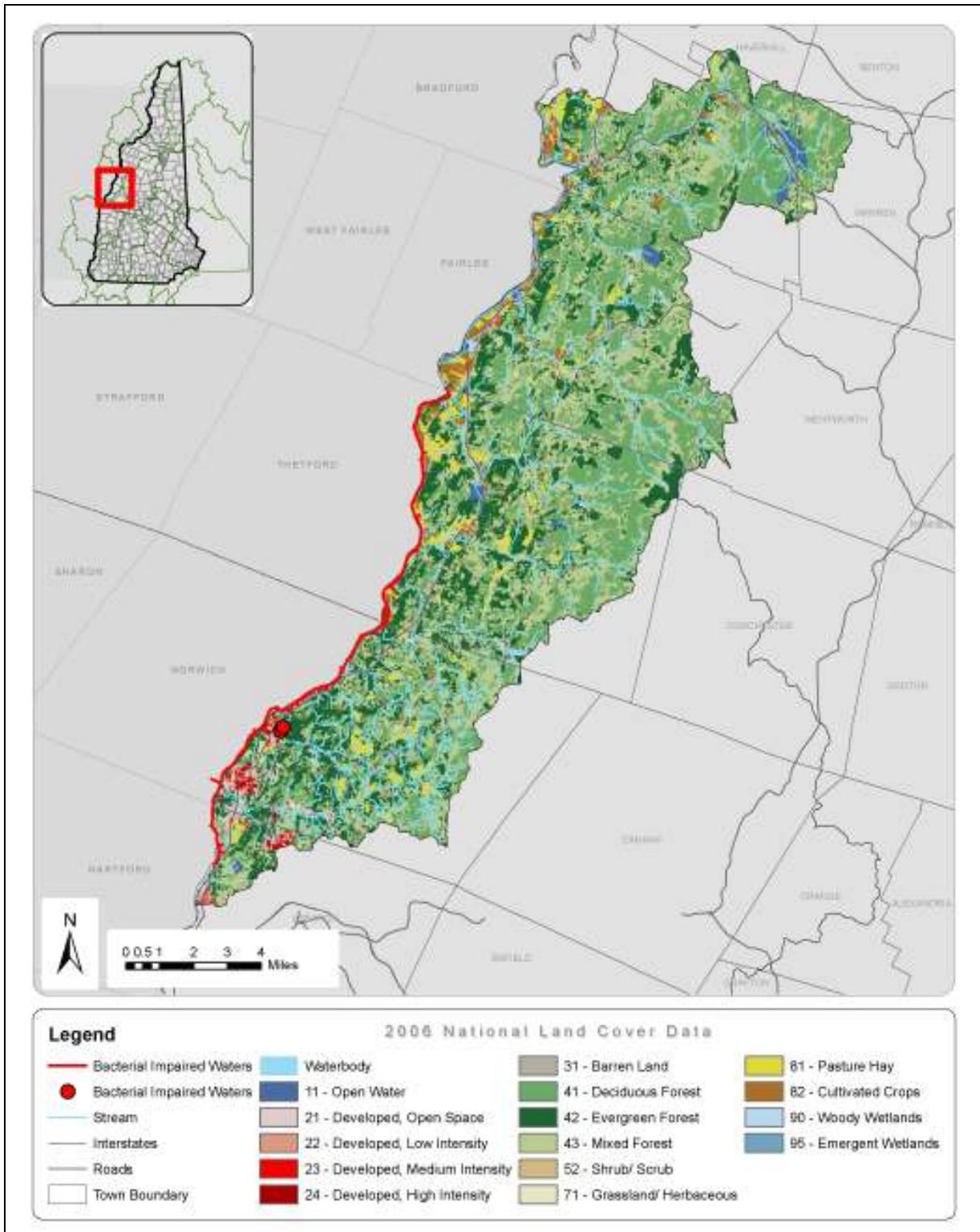
The watershed consists of 83% forested land cover. A minor portion of the woodland is conserved and protected as part of Monadnock State Park, Pisgah State Forest and numerous smaller parks and reserves. Developed and agricultural land equally share 8% of land cover identified in Figure 2. Developed land is found in the urban area of Keene, NH and along major roadways. Development is also prevalent on the shores of waterbodies in the outskirts of the urban area.

Based on the 2010 303(d) list, four assessment units (AUs) in this watershed are listed as being impaired for bacteria. The location of the bacteria impaired surface water AUs are shown on Figure 1 as red lines. Items J1 through J4 present the percent reduction needed to meet each water quality criterion (and TMDL), based on the highest recorded bacteria measurement that exceeds the criterion for the AU, as well as the bacteria data collected in the impaired AUID that was used to list the AU as impaired on the 2010 303(d) list.

FIGURE 1:



**FIGURE 2:**



## II. WATER QUALITY DATA TABLES

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## J1: Ashuelot River – Unnamed Brook

AUID NHRIV802010102-11

*Characteristics:* freshwater, class A designation, primary contact recreation.

*Impairment:* *E coli*

### *Water Quality Criteria & TMDL for E coli*

Single sample: 406 CTS/100ML

Geometric mean: 126 CTS/100mL

### *Percent reduction to meet TMDL:*

Single sample: in compliance

Geometric mean: 17%

*Data:* 2004 - 2008 (inclusive) from NH DES, 2010 TMDL cycle

#### Single sample *E coli* results (CTS/100ML)

Station Name	Station ID	Date	Result
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	6/19/2004	8.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	7/17/2004	10.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	8/21/2004	230.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	6/18/2005	54.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	7/23/2005	20.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	8/20/2005	14.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	7/6/2006	10.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	7/18/2006	12.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	7/17/2007	58.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	8/14/2007	20.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	9/11/2007	48.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	6/23/2008	44.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	7/21/2008	236.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	8/19/2008	91.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	9/15/2008	162.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	6/23/2009	24.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	7/21/2009	32.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	8/18/2009	30.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	5/22/2004	10.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	9/18/2004	115.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	5/21/2005	1.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	9/17/2005	42.0
ASHUELOT RIVER – UNNAMED BROOK	24A-ASH	9/26/2006	14.0

#### Geometric mean *E. coli* results (CTS/100ML)

Station Name	Date	Result
ASHUELOT RIVER – UNNAMED BROOK	9/11/2007	38.2
ASHUELOT RIVER – UNNAMED BROOK	8/19/2008	98.1
ASHUELOT RIVER – UNNAMED BROOK	9/15/2008	151.5
ASHUELOT RIVER – UNNAMED BROOK	8/18/2009	28.5
ASHUELOT RIVER – UNNAMED BROOK	5/23/2004	9.3
ASHUELOT RIVER – UNNAMED BROOK	9/16/2005	22.7

Shaded cells indicate exceedance of water quality criteria

## J2: Ashuelot River – ACOE Dam to Ashuelot River Pond Dam

AUID NHRIV802010301-04

**Characteristics:** freshwater, class B designation, primary contact recreation.

**Impairment:** *E coli*

### **Water Quality Criteria & TMDL for *E coli***

Single sample: 406 CTS/100ML

Geometric mean: 126 CTS/100mL

### **Percent reduction to meet TMDL:**

Single sample: 12%

Geometric mean: in compliance

**Data:** 2004 - 2009 (inclusive) from NH DES, 2010 TMDL cycle

#### **Single sample *E coli* results (CTS/100ML)**

<b>Station Name</b>	<b>Station ID</b>	<b>Date</b>	<b>Result</b>
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	6/19/2004	48.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	7/17/2004	22.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	8/21/2004	130.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	6/18/2005	60.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	7/23/2005	22.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	7/23/2005	250.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	8/20/2005	25.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	7/6/2006	10.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	7/18/2006	30.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	7/17/2007	13.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	8/14/2007	50.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	9/11/2007	411.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	6/23/2008	73.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	7/21/2008	461.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	8/19/2008	28.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	9/15/2008	55.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	6/23/2009	27.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	7/21/2009	26.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	8/18/2009	33.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	5/22/2004	30.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	9/18/2004	350.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	5/21/2005	4.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	9/17/2005	63.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	20A-ASH	9/26/2006	43.0

Shaded cells indicate exceedance of water quality criteria

#### **Geometric mean *E. coli* results (CTS/100ML)**

<b>Station Name</b>	<b>Date</b>	<b>Result</b>
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	7/23/2005	69.1
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	8/20/2005	51.6
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	9/11/2007	64.4
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	8/19/2008	98.0
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	9/15/2008	89.2
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	8/18/2009	28.5
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	5/23/2004	31.6
ASHUELOT RIVER – ACOE DAM TO ASHUELOT RIVER POND DAM	9/16/2005	54.3

### **J3: South Branch Ashuelot River – Unnamed Brook**

**AUID** NHRIV802010303-13

**Characteristics:** freshwater, class B designation, primary contact recreation.

**Impairment:** *E coli*

**Water Quality Criteria & TMDL for *E coli***

Single sample: 406 CTS/100ML

Geometric mean: 126 CTS/100mL

**Percent reduction to meet TMDL:**

Single sample: 36%

Geometric mean: 54%

**Data:** 2005 - 2009 (inclusive) from NH DES, 2010 TMDL cycle

#### **Single sample *E coli* results (CTS/100ML)**

<b>Station Name</b>	<b>Station ID</b>	<b>Date</b>	<b>Result</b>
South Branch Ashuelot River – Unnamed Brook	NH_HEX_58.03	6/22/2005	280.0
South Branch Ashuelot River – Unnamed Brook	NH_HEX_58.03	7/20/2005	630.0
South Branch Ashuelot River – Unnamed Brook	NH_HEX_58.03	8/17/2005	120.0
South Branch Ashuelot River – Unnamed Brook	TROY1	7/17/2009	50.0

#### **Geometric mean *E. coli* results (CTS/100ML)**

<b>Station Name</b>	<b>Date</b>	<b>Result</b>
South Branch Ashuelot River – Unnamed Brook	8/17/2005	276.6

Shaded cells indicate exceedance of water quality criteria

#### **J4: Ashuelot River**

**AUID** NHRIV802010403-19

**Characteristics:** freshwater, class B designation, primary contact recreation.

**Impairment:** *E coli*

**Water Quality Criteria & TMDL for *E coli***

Single sample: 406 CTS/100ML

Geometric mean: 126 CTS/100mL

**Percent reduction to meet TMDL:**

Single sample: 74%

Geometric mean: 89%

**Data:** 2004 - 2009 (inclusive) from NH DES, 2010 TMDL cycle

##### **Single sample *E coli* results (CTS/100ML)**

<b>Station Name</b>	<b>Station ID</b>	<b>Date</b>	<b>Result</b>
ASHUELOT RIVER	02-ASH	6/23/2004	40.0
ASHUELOT RIVER	02-ASH	7/21/2004	70.0
ASHUELOT RIVER	02-ASH	8/18/2004	20.0
ASHUELOT RIVER	02-ASH	6/23/2005	70.0
ASHUELOT RIVER	02-ASH	7/21/2005	60.0
ASHUELOT RIVER	02-ASH	8/18/2005	50.0
ASHUELOT RIVER	02-ASH	6/22/2006	90.0
ASHUELOT RIVER	02-ASH	7/20/2006	540.0
ASHUELOT RIVER	02-ASH	8/17/2006	30.0
ASHUELOT RIVER	02-ASH	6/20/2007	5.0
ASHUELOT RIVER	02-ASH	7/18/2007	10.0
ASHUELOT RIVER	02-ASH	8/22/2007	10.0
ASHUELOT RIVER	02-ASH	6/24/2008	990.0
ASHUELOT RIVER	02-ASH	7/23/2008	880.0
ASHUELOT RIVER	02-ASH	7/23/2008	1,570.0
ASHUELOT RIVER	02-ASH	8/26/2008	10.0
ASHUELOT RIVER	02-ASH	8/26/2008	30.0
ASHUELOT RIVER	02-ASH	6/22/2009	40.0
ASHUELOT RIVER	02-ASH	6/22/2009	70.0
ASHUELOT RIVER	02-ASH	7/20/2009	20.0
ASHUELOT RIVER	02-ASH	8/19/2009	40.0
ASHUELOT RIVER	02-ASH	8/19/2009	50.0

##### **Geometric mean *E. coli* results (CTS/100ML)**

<b>Station Name</b>	<b>Date</b>	<b>Result</b>
ASHUELOT RIVER	8/18/2004	38.3
ASHUELOT RIVER	8/18/2005	59.4
ASHUELOT RIVER	8/17/2006	113.4
ASHUELOT RIVER	7/23/2008	1,110.0
ASHUELOT RIVER	8/26/2008	142.7
ASHUELOT RIVER	8/19/2009	40.7

Shaded cells indicate exceedance of water quality criteria