



GROWING AREA WU
Towns of
Cushing, Thomaston, South Thomaston, and St George
ANNUAL REVIEW for 2009

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APPROVAL

Division Director:

_____ Date: _____
Print name signature



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Figure 1. Growing Area WU Sample Stations, Northern Portion

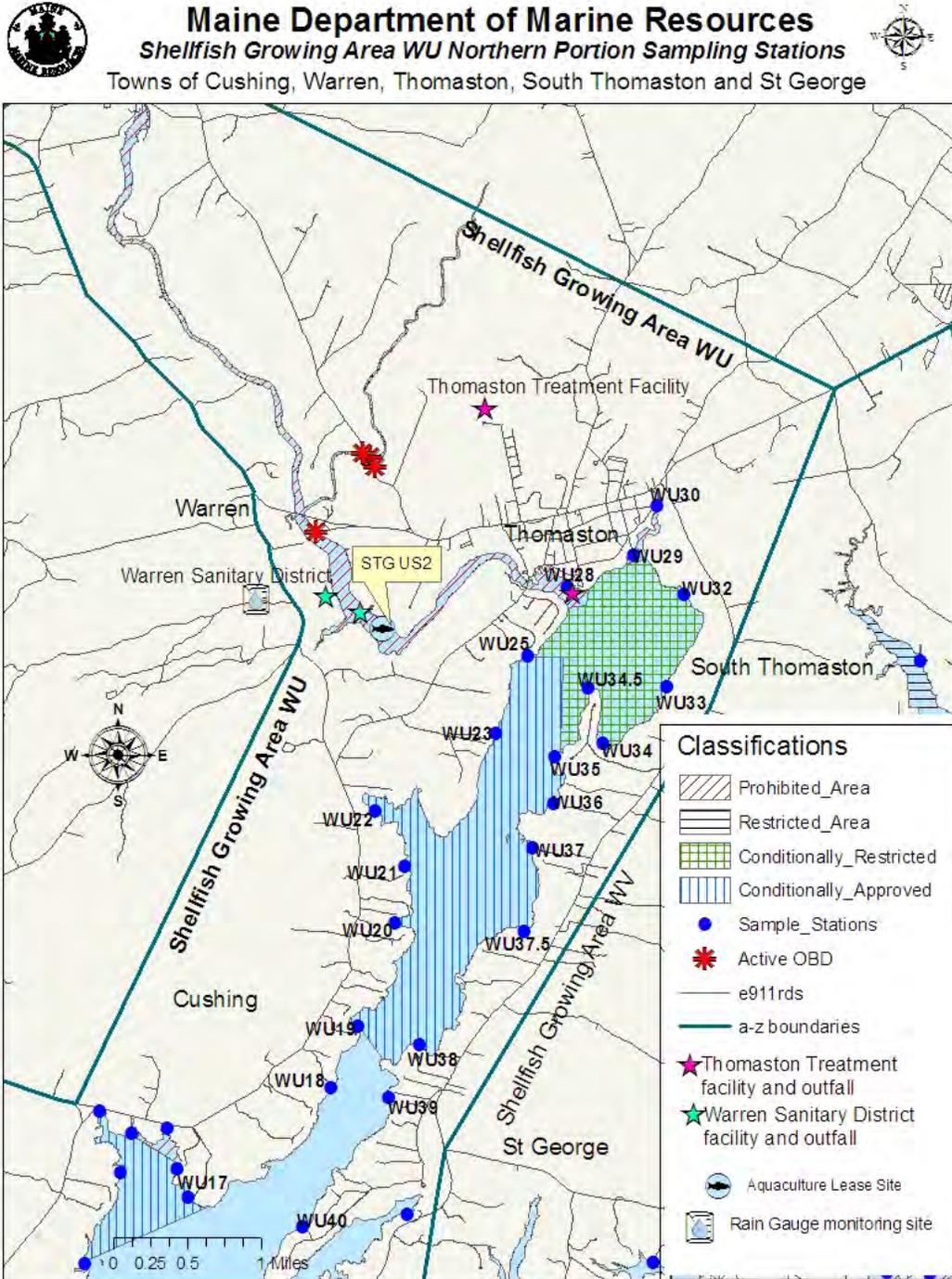
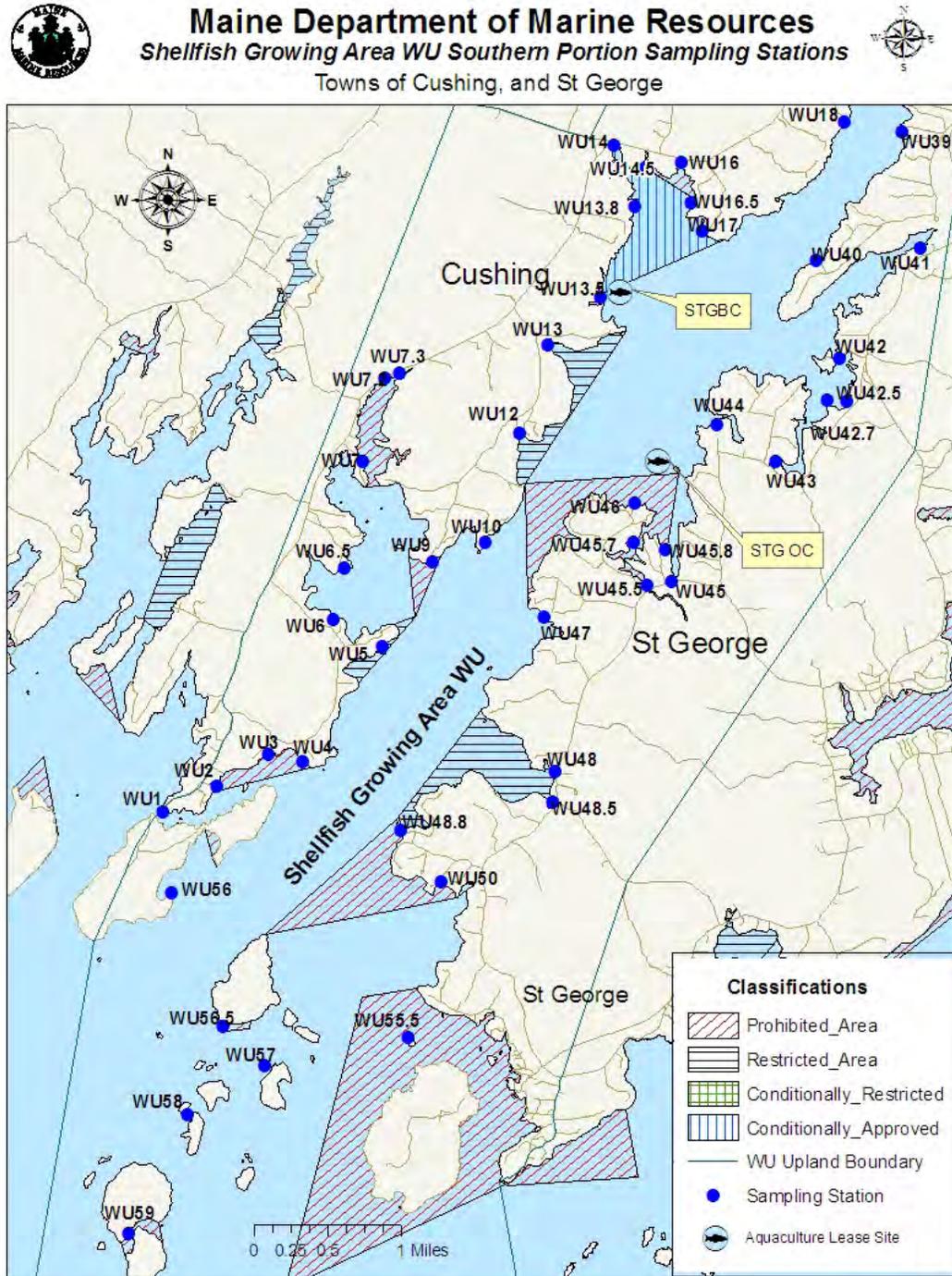




Figure 2. Growing Area WU Sample Stations Southern Portion





Executive Summary

This is an annual report for growing area WU written in compliance with the requirements of the 2007 Model Ordinance and the National Shellfish Sanitation Program (NSSP). The next triennial report is due in 2011; the next sanitary survey report is due in 2019.

Shellfish Growing Area WU covers the shores and waters of the St George River in the towns of Cushing, Warren, Thomaston, South Thomaston and St George. In 2009, the following classification changes were implemented due to pollution abatement: a portion of Pleasant Point Gut Harbor was reclassified as approved for shellfish harvest; Watts Cove, St George was reclassified as approved, and the small closure at Teele Island was repealed.

The spring and summer of 2009 were very wet and there were numerous flood closures caused by the wet weather. Thomaston Treatment facility reported over nine inches of rainfall for the month of June and was forced to request permission for an emergency release of wastewater due to a high water level in their storage lagoon and the inability to spray irrigate due to the wet conditions. The conditionally restricted area was closed on June 30, 2009 to allow for the release of treated effluent. The area reopened on August 14, 2009.

Three stations had P90 scores that no longer met their classification standard at the end of the sample season. These stations include: WU 17, WU48 and WU48.5. All of these stations were reclassified. Station WU17 was reclassified from approved to conditionally approved based on season (date). Stations WU48 and WU48.5 were reclassified from approved to restricted.

Growing Area Description

Shellfish Growing Area WU covers the area from the southeastern tip of Gay Island, Cushing to the western tip of Marshall Point, Port Clyde (Figures 1, 2 and 3). There are also numerous islands in the mouth of the St George River that are included in this growing area. The boundary description of shellfish growing area WU can be found in the growing area WU files. The towns of Cushing, Warren, Thomaston, South Thomaston, and St George all have shore frontage in this growing area. The towns of Warren and Thomaston are the only towns in this growing area that have municipal treatment facilities. The Thomaston Treatment Facility and the Warren Sanitary District are both located at the head of the St George River, near a significant shellfish resource area. There are no major industries along the shore in Shellfish Growing Area WU; Dragon Cement is located nearby the St George River, approximately 0.5 miles away. There are several marine-related businesses along the waterfront in Thomaston. All of these businesses are located along the immediate waterfront which is inside the closure zone for Thomaston Treatment Facility's outfall. The majority of the remaining shore frontage in this growing area is residential.

The resources in Shellfish Growing Area WU are managed by a five town management group which includes diggers from the towns of Cushing, Warren, Thomaston, South Thomaston and



St George. The entire harvestable shore frontage in each of these towns is available to each of the licensed diggers from any of the five towns.

Current Classification(s)

The shores of shellfish growing area WU are classified as approved, conditionally approved, restricted, conditionally restricted and prohibited. There are 70 active water sampling stations monitoring the water quality in shellfish growing area WU.

The station classification breakdown is as follows:

- **Approved:** Twenty-four (24) stations 1, 2, 4, 6, 6.5, 10, 17, 18, 39, 40, 41, 42, 42.5, 43, 44, 45, 45.8, 47, 48, 48.5, 57, 58, 60, 61

- **Conditionally Approved:** Fifteen (15) stations

Area No. 27: 11 stations are conditional on ≥ 1.5 inches of rainfall in 24 hour period; WU 19 (boundary station), 20, 21, 22, 23, 25 (boundary station), 35 (boundary station), 36, 37, 37.5, and 38.

Area No. 27 B: 5 stations are conditional on season, area closed June 1 – Sept. 30; WU 13.5 (boundary station), 13.8, 14, 14.5 and 16.5.

- **Restricted:** Area No. 27 B: Three (3) stations due to non-point pollution; WU 5, 12, 13.
- **Conditionally Restricted:** Area No. 27: Four (4) stations, conditional on operations at Warren and Thomaston Waste Water Treatment Facilities; WU 32, 33, 34, and 34.5.

- **Prohibited** Twenty-two (22) stations

Area No. 27: 2 stations; WU29 and 30, due to non-point pollution

Area No. 27: 1 station - WU28 due to the presence of waste water treatment plant outfall

Area No. 27: 1 station - WU20 due to point source pollution

Area No. 27 B: 16 stations: four stations, WU2, 7, 48.8 and 55.5 due to point source pollution; 13 stations, WU 3, 7.2, 7.3, 9, 16, 45.5, 45.7, 46, 56.5, 57, and 59 due to non-point pollution; and WU 50 due to the of potential septic overflow.

Please visit the DMR website to view legal notices:

http://www.maine.gov/dmr/rm/public_health/closures/closedarea.htm#U

Activity during Review Period

The following classification and station status changes occurred in 2009 (Table 1).

Table 1. Classification Changes During Review Year (2009)

Legal Notice	Station ID	Activity	Old Class	New Class	Date	Reason
27B	WU2	class change	P	A	7/16	Pollution



Legal Notice	Station ID	Activity	Old Class	New Class	Date	Reason
						Abatement
27B	WU42.5 and WU42.7 (new)	class change	P	A	7/16	Pollution Abatement
27B	WU14.5	Modified closure line	CA	CA	7/16	Placed closure line at sample station
27B	WU59	class change	P	A	7/16	Pollution Abatement
27	WU20	class change	P	P	7/17	Pollution Abatement
27B	WU48	class change	A	R	1/12/10	Poor water quality
27B	WU48.5	class change	A	R	1/12/10	Poor water quality

Rainfall closures that occurred during the review year are shown in the annual review of the conditional area management plan in Appendix C.

Current Management Plan(s) for Conditional Area(s)

There are three conditional areas in shellfish growing area WU:

Upper St. George River Conditionally Restricted Area, Area No. 27: this area is conditional on the operations at Thomaston Treatment Facility and the Warren Sanitary District. The conditionally restricted area is required to be closed during Thomaston Treatment Facility's discharge period, from January 1 through March 31. Sampling stations that monitor this conditional area include WU32, 33, 34, 34.5 and 35.

Upper St. George River Conditionally Approved Area, Area No. 27: this area is conditional on rainfall events of $\geq 1.5'$ in a 24 hour period. Sampling stations that monitor this area include WU 19, 22, 23, 25, 35, 36, 37, 37.5, and 38.

Broad Cove Seasonal Conditionally Approved Area, Area No. 27B: this area is conditional on season, and is closed from June 1 to September 30. Sampling stations that monitor this area include WU 13.5, 13.8, 14, 14.5 and 16.5.

Management plans for WU conditional areas can be found in DMR's central files.

Current Annual Review of Management Plan(s)

Upper St. George River Conditionally Restricted Area, Area 27

There have been no malfunctions at the Thomaston Treatment Facility since 1997 when the facility was located at its old location on the Thomaston waterfront. There have also been no



malfunctions at the Warren Sanitary District treatment facility. The annual review of the conditionally restricted area management plan is located in Appendix A.

Upper St. George River Conditionally Approved Area, Area 27

The rainfall conditional area was closed 103 days in 2009, due to rainfall of ≥ 1.5 " in a 24 hour period. The annual review of the rainfall conditional area management plan and a summary of all of the rainfall closures that occurred in 2009 are located in Appendix C.

Broad Cove Seasonal Conditionally Approved Area, Area 27B

This was the first year for the new seasonal conditional area in Broad Cove. The Broad Cove management plan was written (December 23, 2008) for the seasonal conditional area. Broad Cove was reclassified as a conditionally approved area after the 2008 sampling season had ended. Data collected from 2001 through 2008 sampling seasons were used to determine that the area qualified as a seasonal area. This area was sampled six times in the open season in 2009 (October 1-May 31) and three times during the closed season following the NSSP random sampling criteria for a seasonal conditional area. The annual review of the seasonal conditional area management plan is located in Appendix C.

All of the conditional areas on the St George River were managed appropriately in 2009.

Water Quality Review and Discussion

Table 2 lists all active approved, restricted and prohibited stations in Growing Area WU, with their respective Geomean and P90 calculations for 2009. The boundary stations that divide the conditionally approved and approved areas are also shown in table 2. All boundary stations are required to have P90 scores that meet the more restrictive classification. Please refer to Appendix D for a key to interpreting the headers on the columns of Table 2. The approved and restricted standards for each station are also displayed in Table 2. These standards will fluctuate yearly as a result of the DMR transition from a most probable number (MPN) fecal coliform test method to a membrane filtration (MF) method and are dependent on the number of samples analyzed by MPN versus MF. The total number of data points used in the calculations is displayed in the Count column and includes both MPN and MF values. The number of data points analyzed by MF is displayed in the MFCNT column. This fluctuating standard will cease when all 30 data points have been analyzed by the MF method. A more detailed explanation of this transition can be found in central files.

Three approved stations were found to have P90 scores that exceeded the approved standard (WU17, WU48 and WU48.5). Station WU17 is located in Broad Cove Cushing. This area was surveyed in 2006 and no pollution sources were identified in the area. There are also no streams in the immediate area. The station was assessed to see if rainfall or season is impacting the water quality at this site (Table 6, 2000-2009). The majority of the elevated scores occurred during the months from June – September. Two elevated scores occurred in October of 2009. Following the seasonal assessment, this area was reclassified as conditionally approved based on a closed season from June 1- September 30. Stations WU48 and WU48.5



are located in Turkey Cove, St George. There is a large stream that flows into Turkey Cove at station WU48.5. It is probable that heavy runoff due to the extreme wet year impacted the water quality at the stream. A large closure was made in Turkey Cove until the stream can be assessed (January 12, 2010). Stream samples and flow rate data will be collected during the 2010 sampling season. A dilution calculation will be done at the end of the sampling season to determine if the closure size can be reduced.

Table 2. WU P90 Data Excluding Conditional Areas, 2003-2009

Station	Class	Count	MFCCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WU001.00	A	30	21	3.7	0.42	31	13.1	35	195	3/16/2005
WU002.00	A	30	21	4	0.45	94	15.4	35	195	3/16/2005
WU003.00	P	30	21	4.9	0.63	540	32.3	35	195	3/16/2005
WU004.00	A	30	21	3.6	0.47	93	14.5	35	195	3/16/2005
WU005.00	R	30	21	5.1	0.72	1200	44.1	35	195	3/16/2005
WU006.00	A	30	21	6	0.55	93	30.7	35	195	3/16/2005
WU006.50	A	30	21	4.2	0.47	60	17.2	35	195	3/16/2005
WU007.00	P	30	21	6	0.71	1700	50	35	195	3/16/2005
WU007.20	NEW	22	22	11.2	0.7	480	91.8	31	163	7/25/2007
WU007.30	P	30	20	14.7	0.72	1100	124.4	36	199	8/19/2004
WU009.00	P	30	21	6.6	0.79	1100	69	35	195	3/16/2005
WU010.00	A	30	21	5.3	0.56	104	27.9	35	195	8/19/2004
WU012.00	R	30	21	6.5	0.56	93	34.9	35	195	3/16/2005
WU013.00	R	30	21	6.8	0.82	1200	77.8	35	195	3/16/2005
WU013.50	CA-boundary	30	24	4	0.53	300	19.3	33	184	7/27/2005
WU016.00	P	30	23	20.8	0.85	1700	258	34	187	7/27/2005
WU017.00	A	30	23	5.3	0.64	620	35.8	34	187	6/15/2005
WU018.00	A	30	10	6.1	0.48	93	25.5	42	244	8/20/2003
WU019.00	CA- boundary	30	24	3.5	0.42	60	12.5	33	184	10/4/2005
WU028.00	P	30	30	5.2	0.62	420	32.9	31	163	10/1/2006
WU029.00	P	30	30	9.9	0.63	500	64.1	31	163	10/1/2006
WU030.00	P	30	30	15.8	0.71	1700	131	31	163	10/1/2006
WU039.00	A	30	21	4	0.42	56	14.2	35	195	3/20/2003
WU040.00	A	30	21	3.7	0.41	42	12.7	35	195	3/8/2005
WU041.00	A	30	22	5.4	0.48	156	22.8	35	191	4/18/2005
WU042.00	A	30	21	3.4	0.3	18	8.5	35	195	3/8/2005
WU042.50	A	30	21	5.4	0.52	106	25.4	35	195	3/8/2005
WU042.70	NEW	22	22	3.9	0.4	28	13.4	31	163	5/23/2007
WU043.00	A	30	21	3.5	0.33	23	9.4	35	195	3/8/2005
WU044.00	A	30	21	5.4	0.51	93	24.7	35	195	3/8/2005
WU045.00	A	30	21	5.6	0.56	148	29.2	35	195	3/8/2005
WU045.50	P	30	13	7.4	0.61	240	45.5	40	230	10/2/2003
WU045.70	New	23	23	4	0.41	27	13.8	31	163	5/29/2007
WU045.80	A	30	21	3.9	0.38	33	12.3	35	195	3/8/2005



Station	Class	Count	MFCCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WU046.00	P	30	21	3.3	0.29	16	7.8	35	195	3/8/2005
WU047.00	A	30	21	3.4	0.35	33	9.5	35	195	3/8/2005
WU048.00	A	30	21	6.8	0.58	240	37.8	35	195	3/8/2005
WU048.50	A	30	21	7.2	0.67	240	52.6	35	195	3/8/2005
WU048.80	P	30	21	2.8	0.27	16	6.4	35	195	7/26/2005
WU050.00	P	30	21	6.1	0.71	1100	51.1	35	195	3/8/2005
WU055.50	P	29	20	2.2	0.14	9.1	3.5	35	196	8/18/2005
WU056.00	A	30	21	2.1	0.09	3.6	2.9	35	195	8/18/2005
WU056.50	P	30	21	2.2	0.1	3.6	3	35	195	8/18/2005
WU057.00	A	30	21	2.5	0.24	14	5.1	35	195	8/18/2005
WU058.00	A	30	9	2.9	0.25	58	6.3	42	249	4/7/2003
WU059.00	P	30	21	2.2	0.1	3.6	3.1	35	195	8/18/2005
WU060.00	A	30	21	2.2	0.15	9.1	3.5	35	195	8/18/2005
WU061.00	A	30	21	2.2	0.14	9.1	3.5	35	195	8/18/2005

Table 3 shows all conditionally approved stations in the rainfall conditional area with their respective Geomean and P90 calculations for 2009. Data for conditionally approved stations reflects only the open status. All stations met the approved standard during open status.

Table 3. Rainfall Conditional Area in Open Status 2003-2009

Station	Class	Count	MFCCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WU019.00	CA	30	21	2.8	0.23	15	5.6	35	195	3/8/2005
WU020.00	CA	30	16	3.3	0.23	16	6.7	38	216	4/4/2004
WU021.00	CA	30	21	3.9	0.4	52	12.9	35	195	3/8/2005
WU022.00	CA	30	22	5.2	0.44	52	19.4	35	191	5/19/2005
WU023.00	CA	30	21	3.7	0.37	48	11.3	35	195	3/8/2005
WU025.00	CA	30	21	4.8	0.42	43	16.9	35	195	3/8/2005
WU035.00	CA	30	22	3.5	0.34	24	9.8	35	191	5/19/2005
WU036.00	CA	30	21	4	0.3	23	9.9	35	195	3/8/2005
WU037.00	CA	30	21	4.1	0.54	1100	20.4	35	195	3/8/2005
WU037.50	CA	30	21	3.6	0.33	50	9.8	35	195	3/8/2005
WU038.00	CA	30	21	3.8	0.57	1380	20.8	35	195	3/8/2005

Table 4 shows sewage treatment plant conditionally restricted stations in growing area WU with their respective Geomean and P90 calculations for 2009. Data for conditionally restricted stations reflects only the open status. All stations met the restricted standard during open status. Boundary stations WU25 and WU35 are also shown in this table. These stations are classified as conditionally approved. The data for these stations reflects data collected in the open status.



Table 4. Area WU Conditionally Restricted Area in Open Status 2003-2009

Station	Class	Count	MFCCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WU025.00	CA-boundary	30	21	4.8	0.42	43	16.9	35	195	3/8/2005
WU032.00	CR	30	30	5.4	0.56	146	28.5	31	163	11/28/2006
WU033.00	CR	30	30	6	0.69	1040	46.9	31	163	12/5/2006
WU034.00	CR	30	30	8.4	0.73	980	74.4	31	163	12/5/2006
WU034.50	CR	30	30	10.3	0.81	1700	115	31	163	12/5/2006
WU035.00	CA-boundary	30	22	3.5	0.34	24	9.8	35	191	5/19/2005

All of the seasonal conditionally approved stations (based on an open season from October 1 to May 31) continued to have scores that met the NSSP classification standard (Table 5). Data from the years 2001 – 2009 were used to calculate the P90 score in order to get thirty samples during the open season.

Table 5. Area WU Broad Cove Seasonal Conditional Area in Open Status, 2001-2009, October 1 to May 31

Station	Class	Count	MFCCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WU013.50	CA	30	16	3.6	0.46	300	14.4	38	216	5/24/2001
WU013.80	CA	30	16	3.5	0.51	760	15.8	38	216	1/2/2002
WU014.00	CA	30	15	4	0.49	340	17.3	38	221	1/8/2002
WU014.50	CA	30	16	3.7	0.48	300	15.8	38	216	1/8/2002
WU016.50	CA	30	16	3.5	0.47	540	14.5	38	216	5/24/2001

The P90 score for sampling station WU17 did not meet the NSSP approved standard at the end of the 2009 sampling season. There are no streams near this site and no pollution sources were identified during the 2006 survey of the area. A seasonal and rainfall assessment was done (Table 6) to determine if this area should become part of the seasonal conditional area in Broad Cove, Cushing. This area has a closed season during the time period from June 1- September 30. Table 6 shows that station WU17 receives the majority of its elevated scores during the Broad Cove seasonal closed period. The table also shows two elevated scores outside of the closed period in the month of October. Both of these scores were collected in October of 2009 which was a very wet year. This site should become part of the seasonal conditional area in Broad Cove.

Table 6. Station WU17 Season and Rainfall Assessment 2000-2009

Date	Sum Rain	Sal	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
25-Oct-06	No Data	28										2		
13-Nov-06	No Data	25											14	
08-Jul-08	No Data	31							1.9					
12-Jun-00	0	32						2.9						
21-Feb-01	0	28		2.9										
24-Apr-01	0	20				2.9								
24-May-01	0	30					2.9							
25-Jul-01	0	30							3.6					



Date	Sum Rain	Sal	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
09-Sep-01	0	32									2.9			
07-May-02	0	25					2.9							
31-Jul-03	0	31							3.6					
07-Aug-06	0	28								23				
13-May-08	0	28					1.9							
26-Aug-08	0	30								4				
21-Oct-08	0	30										1.9		
24-Mar-09	0	30			1.9									
08-Sep-09	0	28									70			
28-Aug-07	0.01	30								1.9				
23-Apr-08	0.01	25				1.9								
10-Aug-09	0.02	26								1.9				
16-Mar-05	0.03	30			2.9									
03-Dec-00	0.04	31												2.9
28-Aug-03	0.04	32								240				
14-Oct-01	0.05	32										2.9		
05-Jun-02	0.05	29						3.6						
12-Jun-07	0.05	28						8						
13-Jan-03	0.06	31	3.6											
24-Jan-01	0.08	32	2.9											
19-Aug-01	0.1	30								2.9				
05-Nov-00	0.11	29											2.9	
08-Jul-01	0.11	30							2.9					
24-Jan-07	0.13	30	1.9											
10-Jul-02	0.16	30							9.1					
19-Aug-04	0.16	30								31				
19-May-05	0.23	24					2.9							
09-Mar-04	0.24	32			2.9									
06-May-01	0.25	28					2.9							
26-Jun-01	0.3	20						3.6						
07-May-00	0.32	12					3.6							
10-Feb-03	0.33	27		2.9										
05-Aug-02	0.34	30								240				
12-May-09	0.35	26					1.9							
13-Mar-06	0.37	30			2.9									
28-Jul-04	0.4	31							9.1					
14-May-07	0.4	28					1.9							
15-Jan-08	0.42	28	1.9											
05-Jan-04	0.46	28	3											
10-Oct-00	0.48	30										3.6		
23-Sep-03	0.49	30									9.1			
10-Jul-00	0.59	29							9.1					
04-Aug-03	0.59	32								2.9				



Date	Sum Rain	Sal	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
27-Jul-05	0.6	30							2.9					
10-Jul-07	0.68	30							4					
22-Oct-00	0.7	30										2.9		
07-Apr-00	0.74	20				2.9								
04-Nov-01	0.74	32											2.9	
12-May-00	0.76	28					3.6							
04-Feb-02	0.83	30		2.9										
23-Feb-04	0.94	31		2.9										
29-Oct-07	0.95	30										13		
21-Oct-09	0.96	31										620		
06-Sep-06	0.97	30									2			
30-Nov-09	0.98	22											2.8	
08-Jan-02	1	30	2.9											
16-Aug-05	1.02	30								2.9				
06-May-04	1.14	27					2.9							
01-Jun-09	1.15	26						1.9						
03-Mar-03	1.27	30			2.9									
11-Jul-06	1.3	27							23					
07-Oct-09	1.36	29										33		
15-Jun-05	1.6	25						93						
15-Sep-05	2.08	30									9.1			

All of the stations that were active at the beginning of 2009 were sampled at least 6 times following the systematic random sampling (SRS) schedule (Table 6 and Appendix D). At several stations, additional samples were collected under adverse conditions, such as flood condition or samples collected to determine if the rainfall conditional area could reopen. The conditionally approved stations (WU 19-25 and WU35-38 conditional on rainfall) were sampled 6 times in the open status. The Broad Cove conditionally approved stations (WU13.5- WU 16.5) were also sampled six times in the open status.

Table 7. Station Count Table

Station	Class	Adverse		Extra		Random		Total	Comments
		Closed	Open	Closed	Open	Closed	Open		
WU001.00	A						6	6	
WU002.00	A						3	6	Class change to approved due to pollution abatement
	P					3			
WU003.00	P					6		6	
WU004.00	A						6	6	
WU005.00	R						6	6	
WU006.00	A						6	6	
WU006.50	A						6	6	
WU007.00	P					6		6	
WU007.20	P					6		6	



Station	Class	Adverse		Extra		Random		Total	Comments
		Closed	Open	Closed	Open	Closed	Open		
WU007.30	P					6		6	
WU009.00	P					6		6	
WU010.00	A						6	6	
WU012.00	R						6	6	
WU013.00	R						6	6	
WU013.50	CA					3	6	9	
WU013.80	CA					3	6	9	
WU014.00	CA					3	6	9	
WU014.50	CA					3	6	9	
WU016.00	P			1		7		8	
WU016.50	CA					3	6	9	
WU017.00	A	34			1		7	42	Flood Station
WU018.00	A	39					6	45	Flood Station
WU019.00	CA	19				2	6	27	
WU020.00	CA					2	2	8	Class change to conditionally approved based on pollution abatement
	P					4			
WU021.00	CA	17				2	6	25	CA reopening Station
WU021.50	CA						1	1	
WU022.00	CA					2	6	8	
WU023.00	CA	17				2	6	25	CA reopening Station
WU025.00	CA	19	1			3	6	29	CA reopening Station
WU028.00	P	7				9		16	
WU029.00	P	5				9		14	
WU030.00	P	5				9		14	
WU030.10	CR						3	3	
WU031.50	CR						4	4	
WU032.00	CR	7				1	8	16	
WU033.00	CR	7				1	8	16	
WU034.00	CR	7				1	8	16	
WU034.50	CR	7				1	8	16	
WU035.00	CA	19	1			3	6	29	CA reopening Station
WU036.00	CA					2	6	8	
WU037.00	CA	17				2	6	25	CA reopening Station
WU037.30	CA						1	1	
WU037.50	CA					2	6	8	
WU038.00	CA	17				2	6	25	CA reopening Station
WU039.00	A						6	6	
WU040.00	A	38	1				6	45	Flood Station
WU041.00	A						6	6	
WU042.00	A						6	6	
WU042.50	A						3	6	
	P					3			

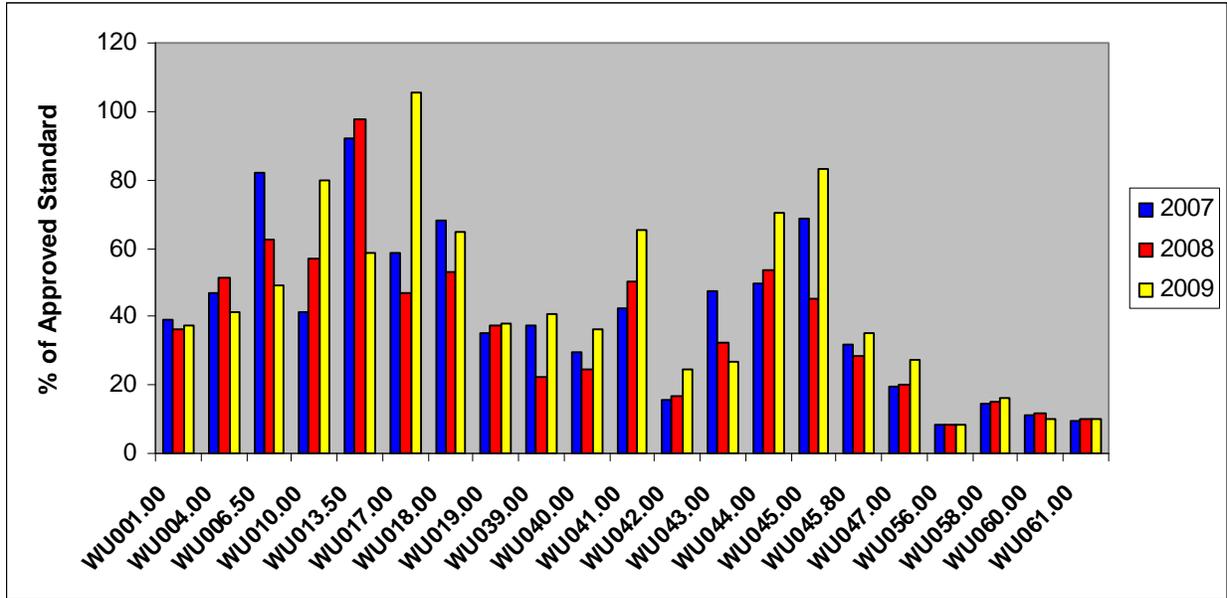


Station	Class	Adverse		Extra		Random		Total	Comments
		Closed	Open	Closed	Open	Closed	Open		
WU042.70	A						3	6	
	P					3			
WU043.00	A						6	6	
WU044.00	A						6	6	
WU045.00	A						6	6	
WU045.50	P					6		6	
WU045.70	P					6		6	
WU045.80	A						6	6	
WU046.00	P					6		6	
WU047.00	A						6	6	
WU048.00	A						6	6	
WU048.50	A						6	6	
WU048.80	P					6		6	
WU050.00	P					6		6	
WU055.50	P					6		6	
WU056.00	A						6	6	
WU056.50	P					6		6	
WU057.00	A						4	6	
	P					2			
WU058.00	A						6	6	
WU059.00	P					6		6	
WU060.00	A						6	6	
WU061.00	A						6	6	

Figure 3 shows the P90 scores, expressed as a percent of the approved standard, for all approved stations. The Broad Cove boundary stations (WU13.5 and WU19) are also shown in figure 3. During the transition from MPN to MF analysis method, the approved standard will decrease every year, until all samples have been analyzed by the MF method. In order to show the trend of the P90 value over the years, the calculated P90 scores are expressed as a percentage of the standard; any station showing the 2009 column on or above 100 percent does not meet its classification standard. At the end of 2009, multiple stations showed upward P90 trends, indicating a decline in water quality. The water quality at station WU 17 no longer meets approved standards. This station was reclassified as conditionally approved based on season. Approved stations showing a significant increase in P90 scores include WU10, WU17, WU18, WU39, WU40, WU41, WU42, WU44, WU45, WU45.8 and WU47 (Figure 2). Stations in this grouping that are located near streams include: WU41, WU42, WU44, WU45, WU45.8 and WU47. No pollution sources were identified near any of these sites during the recent (2006 & 2007) survey of the river. At least some of the rise in water quality scores in 2009 can be attributed to the very wet months of March, June, July, August and October. Each of these months the river received over five inches of rainfall in 2009.



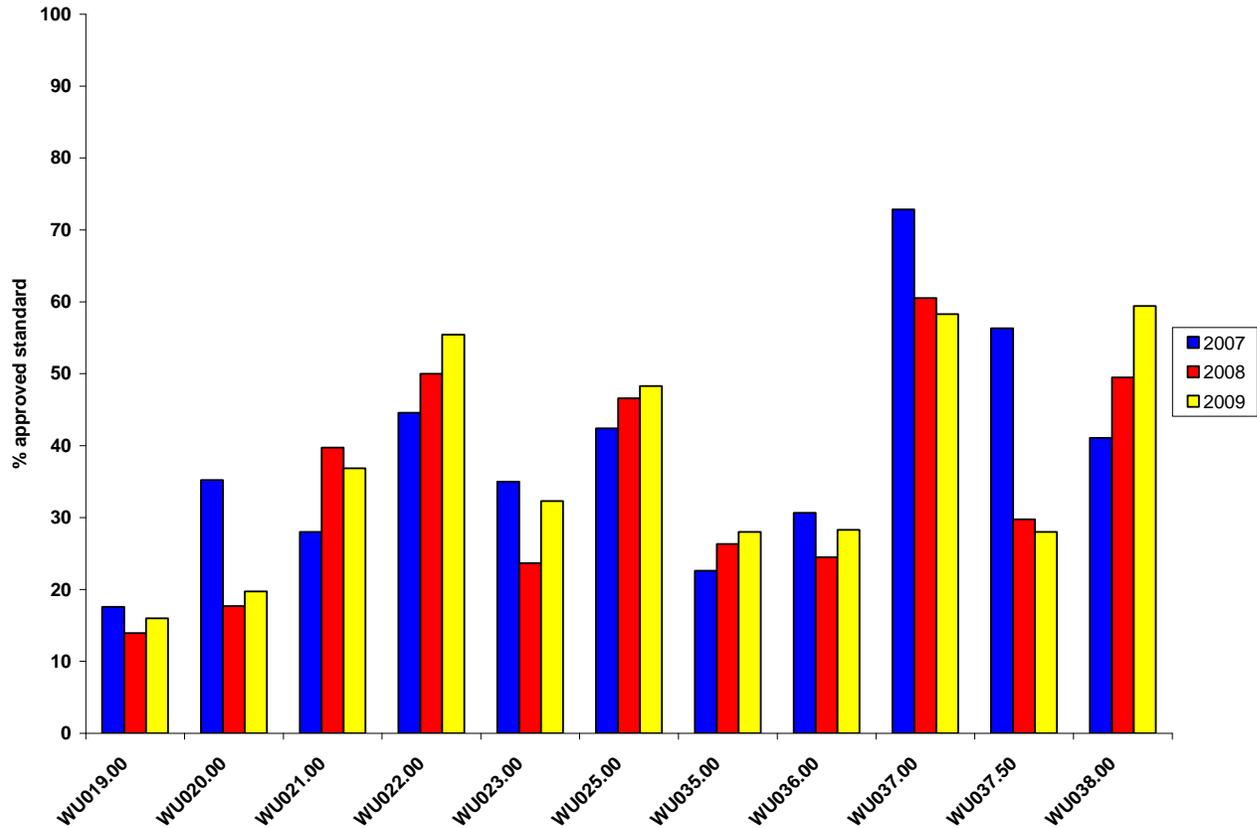
Figure 3. WU P90 Scores, Approved Stations (Expressed as Percent of Approved Standard)



The conditionally approved stations (Figure 4) did not show the same level of deteriorating scores as the approved stations in 2009. This is most likely due to the fact that this area closes when the area receives ≥ 1.5 inches of rainfall and would therefore not be sampled following these heavy rainfall events.



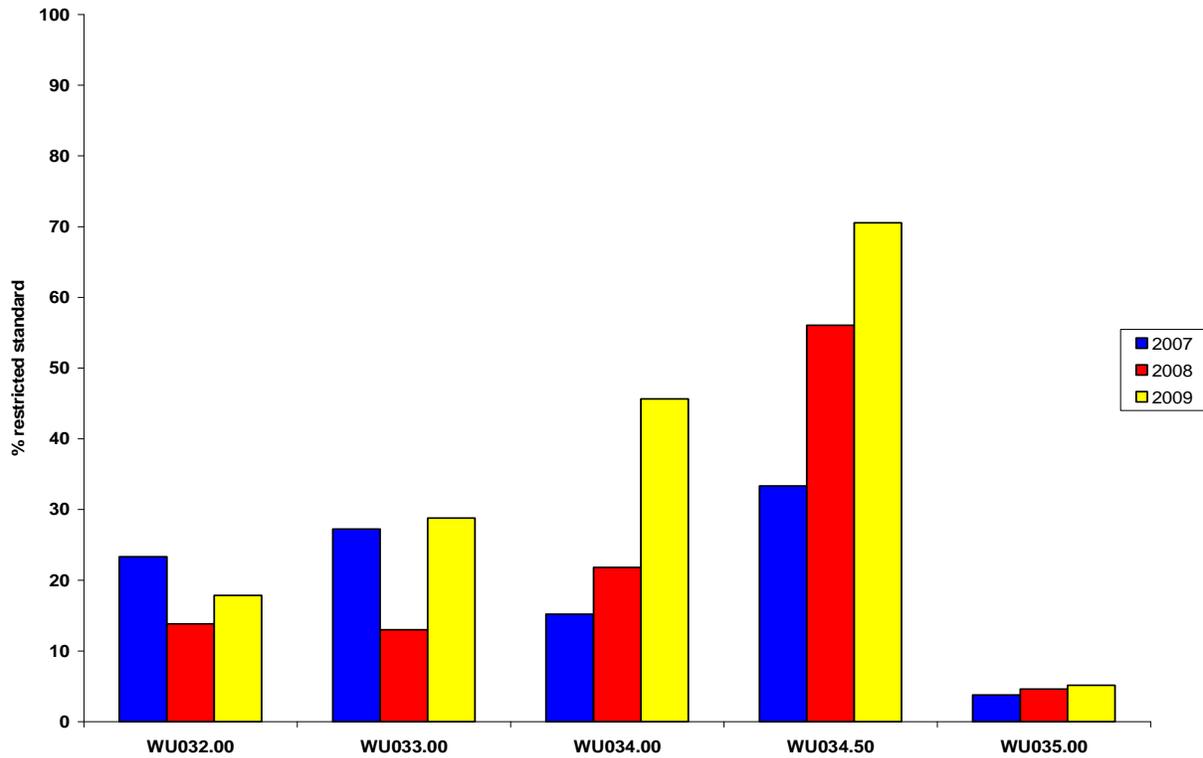
Figure 4. WU P90 Scores Conditionally Approved Stations (Expressed as Percent of Approved Standard)



All of the restricted stations showed an upward trend (deteriorating water quality) in 2009. As with the approved stations, this trend can be attributed to the extremely wet year. Stations WU34 and WU34.5 have been on an upward trend for each of the last three years. Both of these sites were surveyed in 2007 and no pollution sources were identified at either site. Station WU34 is located at the mouth of a stream. It is possible the stream is impacting the water quality. Station WU34.5 is located at the tip of Hospital Point. There is one dwelling at this site. The system was found to be functioning at the time of the survey. Sea birds and seals frequent the rocks close to where the station is sampled. It is possible that water quality at this site is being impacted by wildlife.



Figure 5. WU P90 Scores, Restricted Stations (Expressed as Percent of Restricted Standard)



Recommendations for Upward Classification

No upward changes in classification are being recommended at this time.

Shoreline Survey Activity

No new door to door shoreline survey work was done in this area in 2009. A drive through survey was conducted on August 7, 2009. The status of several previously identified pollution sources were reviewed with the licensed plumbing inspectors responsible for each area. A new septic system was installed (November 30, 2009) at the dwelling located at sample station WU 7. It should be noted that on October 7, 2009 (prior to the new septic system installation) this area received a score of >1600 FC/100ml following rainfall.

Aquaculture/Wet Storage Activity

There are three aquaculture sites on the St George River. Basic information on each of the sites is shown below.



Site: STG US2

Original Date: 5/17/2003 **Effective Date:** 5/17/2003 **Expiration Date:** 5/16/2013

NOAA Chart: 13301

Description: St. George River Warren Knox County

Acreage: 0.17

Species Cultivated: oyster eastern / american (*Crassostrea virginica*)

Cultivation Technique(s): Suspended

Site: STG BC

Original Date: 1/29/2004 **Effective Date:** 1/29/2004 **Expiration Date:** 1/28/2014

NOAA Chart: 13301

Description: Broad Cove St. George River Cushing Knox County

Acreage: 5

Species Cultivated: oyster eastern / american (*Crassostrea virginica*)

Cultivation Technique(s): Suspended

Site: STG OC

Original Date: 5/14/2004 **Effective Date:** 5/14/2004 **Expiration Date:** 5/13/2014

NOAA Chart: 13301

Description: Otis Cove St. George River Tenants Harbor Knox County

Acreage: 2

Species Cultivated: oyster eastern / american (*Crassostrea virginica*) - clam northern quahog / hard (*Mercenaria mercenaria*) - mussel blue sea (*Mytilus edulis*)

Cultivation Technique(s): Suspended

For more information on the aquaculture sites on the St George River visit the website at:

<http://www.maine.gov/dmr/aquaculture/leaseinventory/muscongusbay.htm>

Classification Changes

Stations WU 48 and WU 48.5 were reclassified as restricted on January 12, 2010 due to water quality no longer meeting approved standards. The water quality at station WU 17 no longer meets approved standards on a year round basis. This area was reclassified from approved to conditionally approved on August 30, 2010 (with a closed season from June 1- September 30).

Summary

Shellfish Growing Area WU showed increasing P90 trends (deteriorating water quality) at several of the sampling stations on the river in 2009. These trends are most likely due to the extreme rainfall the area experienced during the spring, summer and fall. No new pollution sources were identified in the growing area WU in 2009. The area around sampling station WU17 was downgraded in classification, and was included in the Broad Cove seasonal conditional area. Three streams are recommended for additional sampling to assess their



impact on their immediate areas. These streams include: S1WU7.3, S1WU16, and S1WU48.5. All of these streams will be sampled several times over the course of the year and under a variety of conditions. Flow rates should also be taken. Dilution calculations will then be done to determine if the closure areas around each stream is adequate.

Recommendation for Future Work

Extra stream data will be collected at S1WU7.3, S1WU16 and S1WU48.5. Flow rates and dilution calculations will also be done for each of these streams.

References

Discharge of Treated Wastewater to the St George River (Kavanah, B., Behr, D., MEDEP)

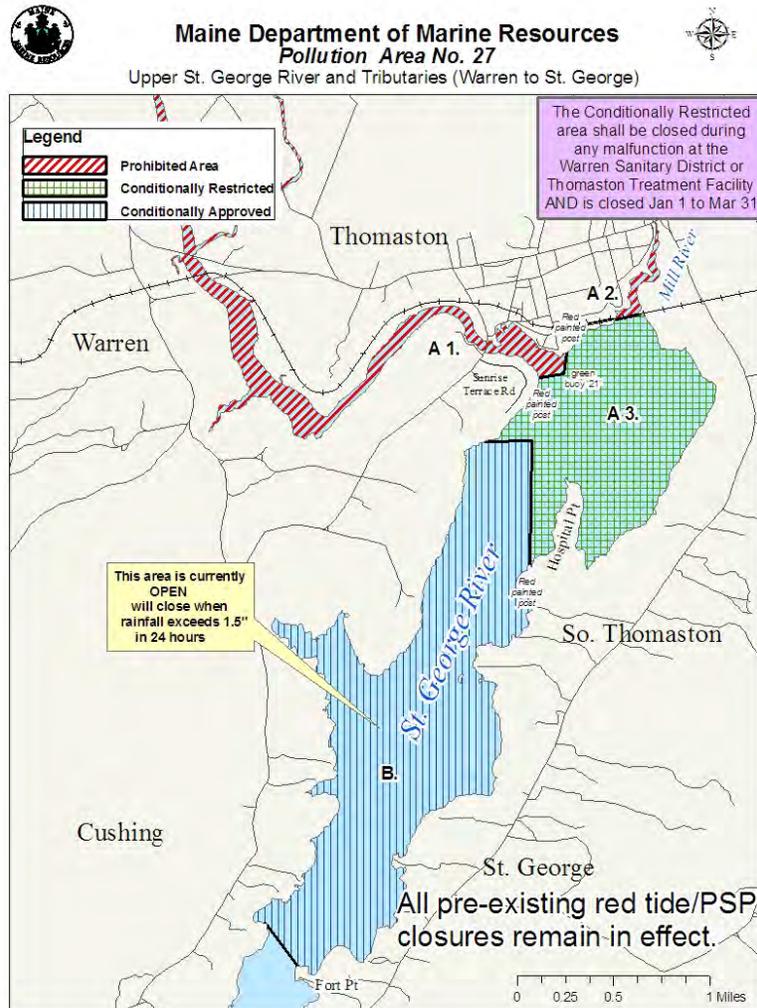
Thomaston Pollution Control Department; Special Discharge to the St George River (Fancy, J.)



Appendix A. Annual Review of Conditional Area Management Plan-St George River Treatment Facility Conditional Area, Legal Notice Area 27

Scope

A portion of Growing Area WU is conditionally restricted, based on the operations at the Thomaston Treatment Facility and the Warren Sanitary District. This area is closed during Thomaston Treatment Facility's discharge period, from January 1 to March 31. This area is also required to be closed when a malfunction is reported by either of these facilities. Water quality in the upper St George conditionally restricted area is monitored by stations WU 32, 33, 34, 34.5 and 35. All conditionally restricted stations must be sampled each month the conditionally restricted area is in the open status.





Compliance with management plan

In 2009, there was one event that necessitated a closure. On June 29, 2009, the Department of Environmental Protection (DEP), contacted DMR staff to request permission for Thomaston Treatment to have a controlled release of treated effluent from the Thomaston Treatment Facility's lagoon. The request was necessary due to a high water level in the storage lagoon caused by over nine inches of rainfall in the month of June and the inability to spray irrigate due to the wet conditions in the spray fields. The DMR agreed to allow the facility to discharge no more than 0.9 million gallons per day of treated effluent starting on June 30 and continuing until closing time on Thursday July 2, 2009. The conditionally restricted area was closed on June 30, 2009 to allow for the release of treated effluent. The area reopened on August 14th, 2009.

Thomaston Treatment Facility staff agreed to contact DMR and state when the discharge had ceased and give an account of the final discharge volume. The treatment facility staff was asked (by DEP) to monitor flow (not to exceed 0.9 MGD), settleable solids, fecal coliform bacteria, total residual chlorine and ph (std. units). They were also asked to collect one sample midway through the discharge for Biochemical Oxygen Demand (BOD) and Total Suspended Solids (TSS). A report of all of the results was to be sent to DEP by July 10, 2009. All of the required testing was conducted and reports on the results were provided to both DEP and DMR.

Adequacy of reporting and cooperation of involved persons

In the event that the conditionally restricted area closure must be implemented due to a malfunction, the management plan for this conditional area requires reporting by the manager (or the alternate on call) of each facility. The conditionally restricted area was closed June 30, 2009 due to a controlled release of treated effluent from the Thomaston Treatment Facility. The area did not reopen until August 14, 2009 due to the many flood closures that took place following the initial release. The cooperation between all involved parties was good and all necessary notifications were received at appropriate times.

Compliance with approved growing area criteria

The annual review of the water quality for all active stations in this conditionally restricted area met restricted standards in the open status. The closure line between the conditionally restricted and conditionally approved area was moved on December 31, 2008 because station WU 34.5 no longer met approved standards. The station located on the closure line which divides two classifications must meet the more restrictive classification as per NSSP guidelines. The closure line was moved to station WU35 on the east side of the river. The end of the closure line on the opposite side of the river was also moved so that the west end of the line could be monitored by sampling station WU 25.

Table 1. Geomean and P90 Calculations for Conditional Stations, Open Status

Station	Class	Count	MFCCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WU025.00	CA	30	21	4.8	0.42	43	16.9	35	195	3/8/2005
WU032.00	CR	30	30	5.4	0.56	146	28.5	31	163	11/28/2006



Station	Class	Count	MFCCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WU033.00	CR	30	30	6	0.69	1040	46.9	31	163	12/5/2006
WU034.00	CR	30	30	8.4	0.73	980	74.4	31	163	12/5/2006
WU034.50	CR	30	30	10.3	0.81	1700	115	31	163	12/5/2006
WU035.00	CA	30	22	3.5	0.34	24	9.8	35	191	5/19/2005

Water sampling compliance history

All of the conditionally restricted and conditionally approved (boundary) stations were sampled each month the area was in the open status in 2009.

Table 2. 2009 Sampling Effort for Stations Monitoring the Conditionally Restricted Area

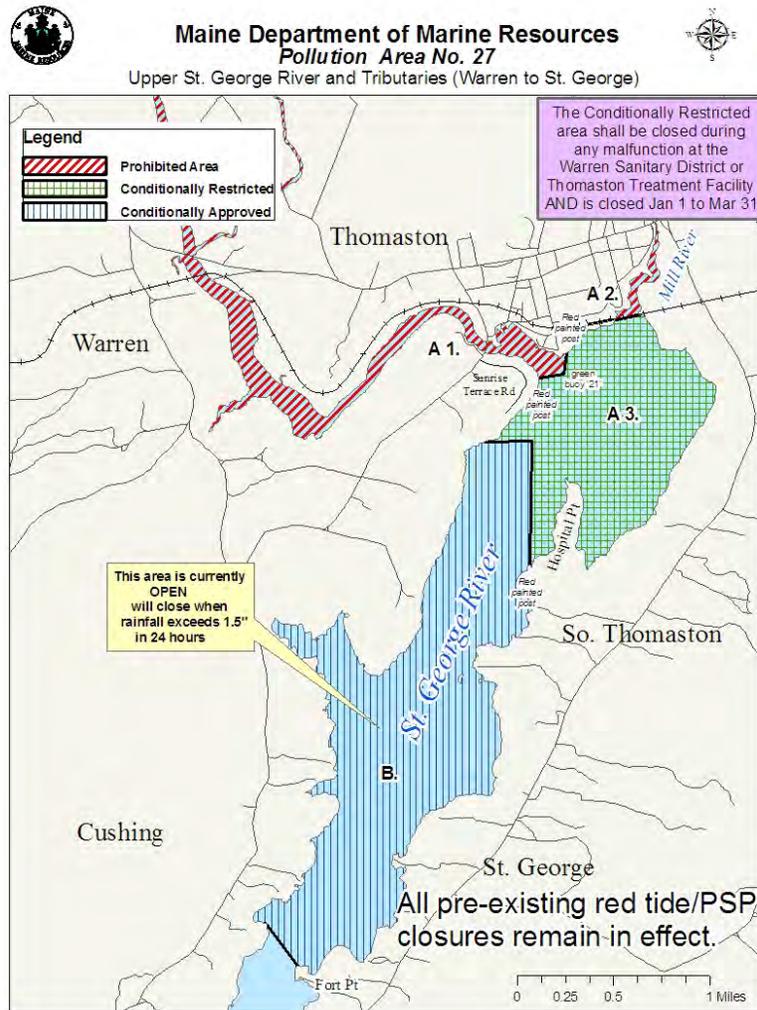
Station	Class	Adverse		Extra		Random		Total	Comments
		Open	Closed	Closed	Open	Closed	Open		
WU025.00	CA-boundary	1	19			3	6	29	Sampled to reopen CA area Adverse closed (flood condition) data was collected to see how area reacted following rainfall. Area was also sampled to reopen following controlled discharge at Thomaston Treatment.
WU032.00	CR		7			1	8	16	
WU033.00	CR		7			1	8	16	
WU034.00	CR		7			1	8	16	
WU034.50	CR		7			1	8	16	
WU035.00	CA	1	19			3	6	29	Sampled to reopen CA area

Analysis and Recommendations

The conditionally restricted area was properly managed in 2009. No management changes are required or recommended at this time.



Appendix B. Annual Review of Conditional Area Management Plan- St George River Rainfall Conditional Area, Legal Notice Area 27



Scope

A portion of Growing Area WU is conditionally approved, based on rainfall. The area closes when rainfall meets or exceeds 1.5 inches in a 24 hour period. Water quality in the upper St George rainfall conditional area is monitored by stations WU 19, 21, 22, 23, 25, 35, 36, 37, 37.5, and 38. All conditionally approved stations must be sampled 6 times per year, in the open status. If the annual cumulative time in the open status is 5 months or less, the areas are required to be sampled 5 times.



Compliance with management plan

In 2009, there were twelve rainfall events of ≥ 1.5 " of rainfall. Several of these events occurred when the rainfall conditional area was already closed due to a prior rainfall event. Per management plan, Maine DMR was notified when rainfall met or exceeded 1.5 inches and the appropriate closures were made (Table 1).

Table 1. Rainfall closure/re-opening activity for 2009

Date Closed Flood=F Rain>1.5=R	Additional rainfall events ≥ 1.5 inches in 24 hours	Date area sampled to reopen:	# Days closed	Date Opened	Open from (date-date)	# days open	Comments
					12/31/08 to 4/7/09	96	
4/7 F (1.79" rain)	4/22 F (2.36" rain)	4/21 5/4	29	5/6	5/6 to 6/11	36	Samples collected 4/21 were clean but rain forecast for 4/22
6/12F 1.68	6/19F 1.53" 6/29F 1.91	7/14 7/15 7/16 pass 7/19dep	35	7/17	7/17/09to 7/24/09	6	Flood closure lifted 6/18
7/24F >2"		8/4 8/9 8/12 8/16 8/17pass 8/18	25	8/14CR 8/18CA	8/18/09 to8/24/09	6	
8/24F 2.75"	8/29F >2"	9/9/09		9/12	9/12/09 To 10/4	23	Legal notice closed 8/25
10/4 1.57"R		10/15		10/19	10/19/09 to 10/26/09	7	
10/26/09 2.72"F		11/4		11/9	11/9/09 to 11/15/09	6	
11/15/09 2.1" F		11/23		11/30	11/30 To 12/3	4	
12/3/09 1.58"R		12/14 12/16pass		12/17	12/17		



Adequacy of reporting and cooperation of involved persons

In the event that the conditional area closure must be implemented due to rainfall, the management plan for this conditional area requires reporting by the municipal_shellfish warden for the St George River. In 2009, the cooperation between all involved parties was good and all necessary notifications were received at appropriate times. If necessary, the shellfish warden called DMR staff at home and on weekends to be sure they were notified in a timely manner.

Compliance with approved growing area criteria

All active stations in this conditional area met approved standards in the open status (Table 2).

Table 2. Geomean and P90 Calculations for Conditional Stations, Open Status

Station	Class	Count	MFCCount	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WU019.00	CA	30	21	2.8	0.23	15	5.6	35	195	3/8/2005
WU020.00	CA	30	16	3.3	0.23	16	6.7	38	216	4/4/2004
WU021.00	CA	30	21	3.9	0.4	52	12.9	35	195	3/8/2005
WU022.00	CA	30	22	5.2	0.44	52	19.4	35	191	5/19/2005
WU023.00	CA	30	21	3.7	0.37	48	11.3	35	195	3/8/2005
WU025.00	CA	30	21	4.8	0.42	43	16.9	35	195	3/8/2005
WU035.00	CA	30	22	3.5	0.34	24	9.8	35	191	5/19/2005
WU036.00	CA	30	21	4	0.3	23	9.9	35	195	3/8/2005
WU037.00	CA	30	21	4.1	0.54	1100	20.4	35	195	3/8/2005
WU037.50	CA	30	21	3.6	0.33	50	9.8	35	195	3/8/2005
WU038.00	CA	30	21	3.8	0.57	1380	20.8	35	195	3/8/2005

Water sampling compliance history

All of the conditionally approved stations were sampled 6 times in the open status in 2009.

Analysis-Recommendations

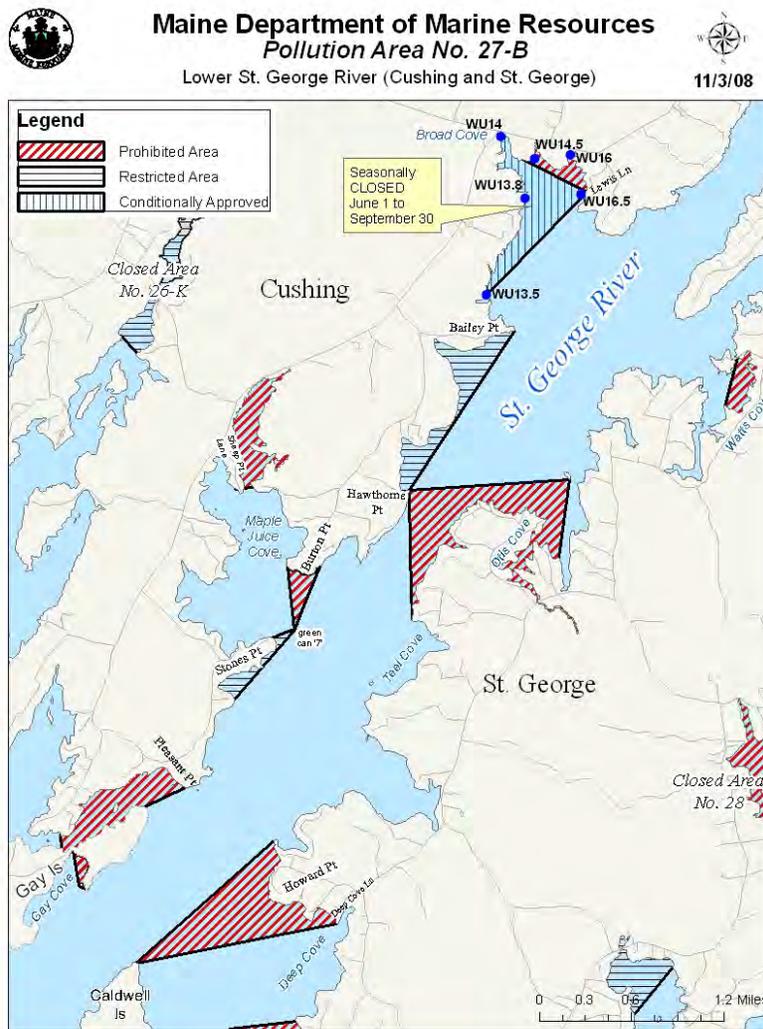
During the 2008 season there were at least two occasions when rainfall reporting stations from the surrounding area had reported > 1.5 inches of rainfall, but the reporting station for the St George River had not received as much rain. There is concern that the current rain gauge site may be impacted by wind which could impact the ability for rainfall to enter the gauge. Although communication between DMR and the shellfish warden was good, it is strongly recommended that either an automated rain gauge be placed in the upper St George River nearby the rainfall conditional area or a manual gauge be placed at a new location. DMR staff is currently looking into alternative options.



Appendix C. Annual Review of Management Plan- Broad Cove Seasonal Conditional Area

Scope

The Broad Cove seasonal conditional area is located in Cushing, Maine in Growing Area WU. This is a new seasonal conditional area which became classified as conditional on November 3, 2008. This seasonal conditional area is closed from June 1 through September 30 because of seasonal non-point pollution, possibly due to an increase in shore usage in the summer months. Monitoring stations WU 13.5, 13.8, 14, 14.5, and 16.5 are located within this conditional area, and monitor water quality both in the open and closed status.





Compliance with management plan

Per management plan, in 2009, this conditional area closed to shellfish harvest on June 1 and reopened on October 1st. Prior to re-opening, a data check was completed to verify that the area was meeting NSSP approved water quality standards in the open status.

The seasonal closures are enforced by Maine Marine Patrol and the local shellfish warden. Cooperation between the involved parties has been excellent.

Adequacy of reporting and cooperation of involved persons

This management plan does not require reporting by non-DMR personnel.

Compliance with approved growing area criteria

All stations in this conditional area met their NSSP standard during the open status (Table 18).

Table 8. Broad Cove, Seasonal Conditional Area, Open Status (October 1 – May 31), 2009

Station	Class	Count	MFC	GM	SDV	MAX	P90	Appd_Std	Restr_Std	Min_Date
WU013.50	CA	30	16	3.6	0.46	300	14.4	38	216	5/24/2001
WU013.80	CA	30	16	3.5	0.51	760	15.8	38	216	1/2/2002
WU014.00	CA	30	15	4	0.49	340	17.3	38	221	1/8/2002
WU014.50	CA	30	16	3.7	0.48	300	15.8	38	216	1/8/2002
WU016.50	CA	30	16	3.5	0.47	540	14.5	38	216	5/24/2001

Water Sampling Compliance History

In 2009 the random sampling effort for stations in the Broad Cove seasonal conditional area was a total of 9 samples with 6 in the open status and 3 in the closed status.

Table 9. Broad Cove, 2009 Sampling Effort

Station	Class	Adverse		Extra		Random		Total	Comments
		Closed	Open	Closed	Open	Closed	Open		
WU013.50	CA					3	6	9	
WU013.80	CA					3	6	9	
WU014.00	CA					3	6	9	
WU014.50	CA					3	6	9	
WU016.50	CA					3	6	9	

Analysis and Recommendations

Broad Cove data will continue to be reviewed prior to the area opening every October first. Stream samples and flow data will be collected at stream site S1WU16. A dilution calculation will be done for this stream at the end of the 2010 sampling season to assure that the closure in this portion of Broad Cove is adequate to protect public health.



Appendix D. Key to Water Quality Table Headers

Station = water quality monitoring station

Class = classification assigned to the station; prohibited (P), restricted (R), conditionally restricted (CR), conditionally approved (CA) and approved (A).

Count = the number of samples evaluated for classification, must be a minimum of 30.

MFCNT = the number of samples evaluated with the MTec method (included in the total Count column)

Geo_Mean = means the antilog (base 10) of the arithmetic mean of the sample result logarithm (base 10).

SDV = standard deviation

Max = maximum score of the 30 data points in the count column

P90 = 90th percentile

APPD_STD = the 90th percentile, at or below which the station would meet approved criteria in the absence of pollution sources or poisonous and deleterious substances.

RESTR_STD = the 90th percentile, at or below which the station would meet restricted criteria.



Appendix E. 2009 Station Data

Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
WU001.00	3/24/2009	FP	E	N	3	30	R		O	A	<2
	5/12/2009	EXT	F	CL	14	30	R		O	A	<2
	6/1/2009	FP	LE	W	13	30	R	P	O	A	<2
	8/10/2009	LSM	F	SW	18	30	R		O	A	<2
	9/8/2009	LSM	HF	CL	18	30	R		O	A	<2
	10/7/2009	LSM	HF	NE	13	31	R	P	O	A	12
WU002.00	3/24/2009	FP	E	N	2	30	R		C	P	<2
	5/12/2009	EXT	F	S	13	29	R		C	P	<2
	6/1/2009	FP	LE	W	10	30	R	P	C	P	10
	8/10/2009	LSM	F	SW	16	28	R		O	A	<2
	9/8/2009	LSM	HF	CL	18	30	R		O	A	<2
	10/7/2009	LSM	HF	NE	13	31	R	P	O	A	5.5
WU003.00	3/24/2009	FP	E	N	3	30	R		C	P	<2
	5/12/2009	EXT	F	CL	13	28	R		C	P	<2
	6/1/2009	FP	LE	W	10	30	R	P	C	P	<2
	8/10/2009	LSM	F	SW	17	28	R		C	P	<2
	9/8/2009	LSM	HF	CL	18	30	R		C	P	<2
	10/7/2009	LSM	HF	NE	13	30	R	P	C	P	24
WU004.00	3/24/2009	FP	E	CL	3	30	R		O	A	<2
	5/12/2009	EXT	F	CL	14	28	R		O	A	<2
	6/1/2009	FP	LE	W	10	30	R	P	O	A	<2
	8/10/2009	LSM	F	SW	17	28	R		O	A	<2
	9/8/2009	LSM	HF	CL	18	30	R		O	A	2
	10/7/2009	LSM	HF	NE	14	28	R	P	O	A	56
WU005.00	3/24/2009	FP	HE	N	2	30	R		O	R	2
	5/12/2009	EXT	F	CL	14	26	R		O	R	<2
	6/1/2009	FP	LE	W	12	30	R	P	O	R	<2
	8/10/2009	LSM	F	SW	19	28	R		O	R	<2
	9/8/2009	LSM	H	SW	17	29	R		O	R	<2
	10/7/2009	LSM	HF	NE	14	28	R	P	O	R	64
WU006.00	3/24/2009	FP	HE	N	0	28	R		O	A	4
	5/12/2009	EXT	F	CL	13	28	R		O	A	<2
	6/1/2009	FP	LE	W	11	28	R	P	O	A	2
	8/10/2009	LSM	F	SW	19	28	R		O	A	22
	9/8/2009	LSM	H	CL	17	28	R		O	A	4
	10/7/2009	LSM	HF	NE	15	28	R	P	O	A	31
WU006.50	3/24/2009	FP	HE	N	2	30	R		O	A	<2
	5/12/2009	EXT	F	CL	14	27	R		O	A	<2
	6/1/2009	FP	E	W	11	29	R	P	O	A	<2



Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	8/10/2009	LSM	F	SW	18	28	R		O	A	<2
	9/8/2009	LSM	H	S	19	30	R		O	A	<2
	10/7/2009	LSM	H	CL	14	29	R	P	O	A	60
WU007.00	3/24/2009	FP	HE	N	2	30	R		C	P	<2
	5/12/2009	EXT	F	CL	13	30	R		C	P	<2
	6/1/2009	FP	E	W	11	19	R	P	C	P	6
	8/10/2009	LSM	F	SW	18	28	R		C	P	<2
	9/8/2009	LSM	H	SW	18	30	R		C	P	20
	10/7/2009	LSM	H	CL	14	26	R	P	C	P	>1600
WU007.20	3/24/2009	FP	HE	N	2	25	R		C	P	<2
	5/12/2009	EXT	F	CL	16	24	R		C	P	4
	6/1/2009	FP	E	W	14	16	R	P	C	P	5.5
	8/10/2009	LSM	F	SW	25	12	R		C	P	42
	9/8/2009	LSM	H	CL	25	24	R		C	P	10
	10/7/2009	LSM	H	CL	14	22	R	P	C	P	68
WU007.30	3/24/2009	FP	HE	N	2	26	R		C	P	<2
	5/12/2009	EXT	F	CL	15	24	R		C	P	2
	6/2/2009	FP	HE	CL	12	10	R		C	P	18
	8/10/2009	LSM	HF	CL	25	1	R		C	P	18
	9/8/2009	LSM	H	CL	20	22	R		C	P	16
	10/7/2009	LSM	H	CL	14	20	R	P	C	P	62
WU009.00	3/24/2009	FP	HE	N	3	30	R		C	P	<2
	5/12/2009	EXT	HF	SW	13	29	R		C	P	<2
	6/1/2009	FP	E	W	10	28	R	PW	C	P	<2
	8/10/2009	LSM	HF	SW	18	28	R	W	C	P	2
	9/8/2009	LSM	H	S	17	30	R	W	C	P	<2
	10/7/2009	LSM	H	CL	14	31	R	PW	C	P	420
WU010.00	3/24/2009	FP	HE	N	3	30	R		O	A	<2
	5/12/2009	EXT	HF	SW	13	26	R		O	A	2
	6/1/2009	FP	E	W	10	29	R	P	O	A	<2
	8/10/2009	LSM	HF	SW	19	28	R		O	A	<2
	9/8/2009	LSM	HE	SW	17	30	R		O	A	29
	10/7/2009	LSM	H	CL	14	31	R	P	O	A	104
WU012.00	3/24/2009	FP	H	N		28	R		O	R	<2
	5/12/2009	EXT	HF	SW	15	24	R		O	R	<2
	6/1/2009	FP	E	W	10	28	R	PW	O	R	2
	8/10/2009	LSM	HF	SW	25	24	R		O	R	<2
	9/8/2009	LSM	HE	S	19	28	R		O	R	2
	10/7/2009	LSM	H	CL	15	29	R	P	O	R	60
WU013.00	3/24/2009	FP	H	N		30	R		O	R	<2
	5/12/2009	EXT	HF	CL	16	25	R		O	R	<2
	6/1/2009	FP	E	W	10	28	R	PW	O	R	<2



Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	8/10/2009	LSM	HF	CL	19	26	R		O	R	<2
	9/9/2009	FP	F	NE	17	30	R		O	R	<2
	10/7/2009	LSM	H	CL	14	25	R	P	O	R	500
WU013.50	2/10/2009	FP	H	CL	0	31	R		O	CA	<2
	3/24/2009	FP	H	N	1	30	R		O	CA	<2
	5/12/2009	EXT	HF	SW	16	24	R		O	CA	10
	6/1/2009	FP	E	W	10	28	R	P	C	CA	2
	8/10/2009	LSM	HF	CL	19	26	R		C	CA	<2
	9/8/2009	LSM	HE	CL	19	28	R		C	CA	<2
	10/7/2009	LSM	H	CL	14	20	R	P	O	CA	300
	10/21/2009	FP	H	NW	10	29	R		O	CA	<2
11/30/2009	FP	HE	CL	7	24	R	P	O	CA	2	
WU013.80	2/10/2009	FP	HF	CL	0	30	R		O	CA	<2
	3/24/2009	FP	H	N	2	30	R		O	CA	<2
	5/12/2009	EXT	HF	S	17	25	R		O	CA	<2
	6/1/2009	FP	E	W	9	28	R	P	C	CA	<2
	8/10/2009	LSM	H	SW	22	26	R		C	CA	38
	9/9/2009	FP	F	NE	15	30	R		C	CA	2
	10/7/2009	LSM	E	CL	14	29	R	P	O	CA	760
	10/21/2009	FP	H	CL	9	30	R		O	CA	<2
11/30/2009	FP	HE	CL	5	24	R	P	O	CA	2	
WU014.00	2/10/2009	FP	HF	CL	0	25	R		O	CA	2
	3/24/2009	FP	H	N	2	30	R	W	O	CA	<2
	5/12/2009	EXT	H	CL	18	25	R		O	CA	<2
	6/2/2009	FP	HE	CL	11	26	R		C	CA	2
	8/10/2009	LSM	H	SW	25	26	R		C	CA	8
	9/8/2009	LSM	HF	CL	19	29	R		C	CA	<2
	10/7/2009	LSM	F	CL	13	22	R	P	O	CA	340
	10/21/2009	FP	H	CL	10	30	R		O	CA	<2
11/30/2009	FP	HE	CL	5	22	R	P	O	CA	14	
WU014.50	2/10/2009	FP	HF	CL	0	30	R		O	CA	<2
	3/24/2009	FP	H	N	2	30	R	W	O	CA	<2
	5/12/2009	EXT	H	S	15	25	R		O	CA	2
	6/1/2009	FP	E	W	10	28	R	PW	C	CA	<2
	8/10/2009	LSM	H	SW	25	26	R		C	CA	480
	9/8/2009	LSM	F	CL	20	28	R		C	CA	6
	10/7/2009	LSM	F	CL	13	8	R	P	O	CA	300
	10/21/2009	FP	H	SW	10	30	R	W	O	CA	<2
11/30/2009	FP	HE	CL	5	22	R	P	O	CA	2	
WU016.00	2/10/2009	FP	HF	CL	0	2	R		C	P	24
	3/24/2009	FP	H	N	2	24	R		C	P	<2
	5/12/2009	EXT	H	CL	16	23	R		C	P	2



Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	6/2/2009	FP	HE	CL	11	18	R		C	P	6
	8/10/2009	LSM	H	SW	25	14	R		C	P	94
	9/8/2009	LSM	HF	CL	20	24	R		C	P	8
	10/7/2009	LSM	F	CL	14	8	R	P	C	P	>1600
	11/30/2009	FP	HE	CL	5	14	E	P	C	P	3.6
WU016.50	2/10/2009	FP	F	CL	0	30	R		O	CA	<2
	3/24/2009	FP	HF	N	0	30	R		O	CA	<2
	5/12/2009	EXT	H	CL	15	26	R		O	CA	2
	6/1/2009	FP	E	W	9	16	R	P	C	CA	114
	8/10/2009	LSM	H	SW	20	26	R		C	CA	<2
	9/8/2009	LSM	HE	S	19	28	R		C	CA	<2
	10/7/2009	LSM	E	NE	14	22	R	P	O	CA	540
	10/21/2009	FP	H	SW	10	29	R		O	CA	<2
11/30/2009	FP	HE	SW	7	18	R	P	O	CA	16	
WU017.00	3/24/2009	FP	HF	N	1	30	R		O	A	<2
	5/12/2009	EXT	H	S	14	26	R		O	A	<2
	6/1/2009	FP	L	W	12	26	R	P	O	A	<2
	8/10/2009	LSM	H	SW	20	26	R		O	A	<2
	9/8/2009	LSM	HE	S	18	28	R		O	A	70
	10/7/2009	LSM	E	NE	13	29	R	P	O	A	33
	10/21/2009	FP	HE	CL	9	31	R		O	A	620
11/30/2009	FP	HE	SW	7	22	E	P	O	A	2.8	
WU018.00	2/9/2009	MLP	H	CL	0	31	R		O	A	<2
	3/24/2009	FP	HF	N	1	26	R		O	A	<2
	5/12/2009	EXT	H	S	15	23	R		O	A	<2
	8/10/2009	LSM	H	SW	20	26	R		O	A	8
	9/8/2009	LSM	HE	S		28	R		O	A	4
10/7/2009	LSM	E	NE	13	29	R	P	O	A	27	
WU019.00	2/9/2009	FP	H	NW	0	30	R		O	CA	<2
	3/24/2009	MLP	HF	N	0	25	R		O	CA	<2
	5/20/2009	FP	H	CL	10	25	R		O	CA	<2
	6/7/2009	GLE	HE	N	15	26	R		O	CA	<2
	8/23/2009	GLE	F	N	20	28	R	P	C	CA	54
	9/13/2009	GLE	E	CL	15	28	R		O	CA	9.1
	10/4/2009	GLE	HF		14	28	R	P	C	CA	60
	12/2/2009	FP	HF	CL	6	25	R		O	CA	3.6
WU020.00	2/9/2009	FP	H	NW	1	28	R		C	P	4
	3/24/2009	MLP	HF	N	-1	20	R		C	P	<2
	5/20/2009	FP	H	CL	10	21	R		C	P	2
	6/7/2009	GLE	HE	N	16	23	R		C	P	<2
	8/23/2009	GLE	HF	CL	20	26	R	P	C	CA	132
	9/13/2009	GLE	HE	CL	14	28	R		O	CA	4



Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	10/4/2009	GLE	HF		20	28	R	P	C	CA	420
	12/2/2009	FP	H	CL	5	23	R		O	CA	6
WU021.00	2/9/2009	FP	H	CL	0	29	R		O	CA	<2
	3/24/2009	MLP	HF	N	0	26	R		O	CA	<2
	5/20/2009	FP	H	CL	9	19	R	W	O	CA	2
	6/7/2009	GLE	HE	N	15	24	R		O	CA	<2
	8/23/2009	GLE	HF	CL	19	26	R	P	C	CA	126
	9/13/2009	GLE	HE	CL	14	30	R		O	CA	<2
	10/4/2009	GLE	HF		20	26	R	P	C	CA	320
	12/2/2009	FP	H	CL	5	20	R		O	CA	<2
	WU022.00	2/9/2009	FP	HE	CL	0	24	R		O	CA
3/24/2009		MLP	H	N	0	24	R	W	O	CA	<2
5/20/2009		FP	H	CL	10	18	R		O	CA	5.5
6/7/2009		GLE	HE	N	15	24	R		O	CA	<2
8/23/2009		GLE	HF	CL	21	25	R	P	C	CA	220
9/13/2009		GLE	HE	CL	15	28	R		O	CA	10
10/4/2009		GLE	H		20	28	R	P	C	CA	840
12/2/2009		FP	H	CL	3	17	R		O	CA	<2
WU023.00	2/9/2009	FP	HE	CL	1	30	R		O	CA	<2
	3/24/2009	MLP	H	NE	1	25	R		O	CA	48
	5/20/2009	FP	HE	CL	11	22	R	W	O	CA	<2
	6/7/2009	GLE	HE	N	14	25	R		O	CA	2
	8/23/2009	GLE	H	N	24	26	R	P	C	CA	46
	9/13/2009	GLE	HE	CL	14	27	R		O	CA	6
	10/4/2009	GLE	H		20	24	R	P	C	CA	460
	12/2/2009	FP	H	CL	5	22	R		O	CA	2
WU025.00	2/9/2009	FP	HE	NW	0	28	R		O	CA	<2
	3/24/2009	MLP	H	CL	2	28	R		O	CA	<2
	4/29/2009	FP	F	CL	9	25	R		C	CA	<2
	5/20/2009	FP	HE	CL	11	19	R		O	CA	4
	6/7/2009	GLE	E	N	15	25	R		O	CA	<2
	8/23/2009	GLE	H	N	20	26	R	P	C	CA	25
	9/13/2009	GLE	H	CL	15	26	R		O	CA	8
	10/4/2009	GLE	H		20	28	R	P	C	CA	138
	12/2/2009	FP	H	CL	6	18	R		O	CA	2
WU028.00	3/24/2009	MLP	H	N	2	30	R		C	P	<2
	4/29/2009	FP	F	NW	5	29	R		C	P	2
	5/20/2009	FP	E	CL	11	21	R	W	C	P	2
	6/7/2009	GLE	E	N	13	28	R		C	P	2
	8/23/2009	GLE	HE	N	20	26	R	P	C	P	38
	9/13/2009	GLE	E	CL	14	29	R		C	P	6
	10/4/2009	GLE	HE		20	15	R	P	C	P	420



Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	11/23/2009	EXT	HF	SE	9	14	R		C	P	14
	12/7/2009	FP	F	CL	7	14	R		C	P	8
WU029.00	3/24/2009	MLP	H	N	1	26	R		C	P	<2
	4/29/2009	FP	F	NW	10	24	R		C	P	2
	5/20/2009	FP	HE	CL	11	11	R		C	P	16
	6/7/2009	GLE	E	N	16	26	R		C	P	<2
	8/23/2009	GLE	HE	CL	25	24	R	P	C	P	500
	9/13/2009	GLE	E	CL	15	26	R		C	P	14
	10/4/2009	GLE	H		20	25	R	P	C	P	260
	11/23/2009	EXT	HF	SE	8	10	R		C	P	8
	12/7/2009	FP	HF	CL	8	4	R		C	P	6
WU030.00	3/24/2009	MLP	H	NE	0	0	R		C	P	<2
	4/29/2009	FP	F	N	13	0	R		C	P	<2
	5/20/2009	FP	HE	CL	11	2	R		C	P	33
	6/7/2009	GLE	E	N	16	16	R		C	P	9.1
	8/23/2009	GLE	HE	CL	25	4	R	P	C	P	>1600
	9/13/2009	GLE	E	CL	16	0	R		C	P	52
	10/4/2009	GLE	HE		20	27	R	P	C	P	140
	11/23/2009	EXT	HF	CL	6	0	R		C	P	<2
12/7/2009	FP	HF	CL	4	0	R		C	P	6	
WU032.00	3/24/2009	MLP	H	NE	1	28	R	W	C	CR	<2
	4/29/2009	FP	HF	NW	10	21	R		O	CR	<2
	5/20/2009	FP	HE	CL	11	18	R		O	CR	8
	6/7/2009	GLE	E	N	18	20	R		O	CR	2
	8/23/2009	GLE	H	N	23	14	R	P	O	CR	146
	9/13/2009	GLE	H	CL	15	24	R	W	O	CR	4.3
	10/4/2009	GLE	H		20	30	R	P	O	CR	44
	11/23/2009	EXT	F	S	9	20	R		O	CR	2
12/7/2009	FP	HF	CL	8	6	R	W	O	CR	8	
WU033.00	3/24/2009	MLP	HE	N	1	24	R		C	CR	<2
	4/29/2009	FP	HF	NW	15	14	R		O	CR	<2
	5/20/2009	FP	E	CL	10	16	R		O	CR	2
	6/7/2009	GLE	E	N	19	17	R		O	CR	2
	8/23/2009	GLE	H	N	25	18	R	P	O	CR	1040
	9/13/2009	GLE	H	CL	15	26	R	W	O	CR	<2
	10/4/2009	GLE	H		20	24	R	P	O	CR	500
	11/23/2009	EXT	F	CL	9	15	R		O	CR	10
12/7/2009	FP	HF	CL	6	3	R	W	O	CR	16	
WU034.00	3/24/2009	MLP	HE	NE	-1	8	R		C	CR	2
	4/29/2009	FP	HF	NW	15	8	R		O	CR	2
	5/20/2009	FP	E	CL	11	18	R		O	CR	<2
	6/7/2009	GLE	HE	N	19	24	R		O	CR	<2



Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	8/23/2009	GLE	H	N	24	21	R	P	O	CR	980
	9/13/2009	GLE	H	CL	15	24	R		O	CR	11
	10/4/2009	GLE	H		22	12	R	PW	O	CR	880
	11/23/2009	EXT	F	CL	8	10	R	W	O	CR	6
	12/7/2009	FP	H	CL	8	8	R	W	O	CR	2
WU034.50	3/24/2009	MLP	HE	NE	0	24	R		C	CR	<2
	4/29/2009	FP	HF	NW	9	23	R		O	CR	12
	5/20/2009	FP	E	CL	10	23	R	W	O	CR	2
	6/7/2009	GLE	E	N	16	23	R		O	CR	<2
	8/23/2009	GLE	F	N	20	26	R	P	O	CR	200
	9/13/2009	GLE	H	CL	15	26	R	W	O	CR	12
	10/4/2009	GLE	H		20	24	R	P	O	CR	220
	11/23/2009	EXT	F	SE	9	25	R		O	CR	<2
12/7/2009	FP	H	CL	8	8	R	W	O	CR	9.1	
WU035.00	2/9/2009	FP	E	NW	0	26	R		O	CA	<2
	3/24/2009	MLP	HE	NE	0	26	R		O	CA	<2
	4/29/2009	FP	H	NW	12	19	R		C	CA	8.5
	5/20/2009	FP	E	CL	11	23	R		O	CA	<2
	6/7/2009	GLE	HE	N	16	23	R		O	CA	<2
	8/23/2009	GLE	H	N	21	26	R	P	C	CA	84
	9/13/2009	GLE	HE	CL	14	28	R		O	CA	4
	10/4/2009	GLE	H		20	30	R	P	C	CA	15
12/2/2009	FP	HE	CL	5	22	R		O	CA	<2	
WU036.00	2/11/2009	FP	F	CL	0	23	R		O	CA	2
	3/24/2009	MLP	HE	NE	-1	20	R		O	CA	<2
	5/20/2009	FP	E	CL	11	12	R		O	CA	7.3
	6/7/2009	GLE	HE	N	16	23	R		O	CA	2
	8/23/2009	GLE	HF	N	23	20	R	P	C	CA	1100
	9/13/2009	GLE	HE	CL	14	28	R		O	CA	12
	10/4/2009	GLE	H		20	29	R	P	C	CA	68
	12/2/2009	FP	HE	CL	5	22	R		O	CA	2
WU037.00	2/9/2009	FP	E	NW	0	25	R		O	CA	<2
	3/24/2009	MLP	E	CL	2	26	R		O	CA	<2
	5/20/2009	FP	E	CL	10	23	R		O	CA	4
	6/7/2009	GLE	HE	N	15	27	R		O	CA	<2
	8/23/2009	GLE	HF	N	20	26	R	P	C	CA	96
	9/13/2009	GLE	HE	CL	14	29	R	W	O	CA	2
	10/4/2009	GLE	H		20	30	R	PW	C	CA	6
	12/2/2009	FP	HE	CL	6	23	R		O	CA	4
WU037.50	2/11/2009	FP	F	CL	0	27	R		O	CA	3.5
	3/24/2009	MLP	E	N	-1	16	R		O	CA	<2
	5/20/2009	FP	E	CL	12	23	R		O	CA	<2



Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	6/7/2009	GLE	HE	N	16	25	R		O	CA	2
	8/23/2009	GLE	HF	N	22	24	R	P	C	CA	340
	9/13/2009	GLE	HE	CL	14	29	R		O	CA	<2
	10/4/2009	GLE	HF		20	28	R	P	C	CA	56
	12/2/2009	FP	HE	CL	5	22	R		O	CA	6
WU038.00	2/9/2009	FP	E	NW	0	28	R		O	CA	<2
	3/24/2009	MLP	E	N	0	24	R		O	CA	2
	5/20/2009	FP	E	CL	13	19	R		O	CA	4
	6/7/2009	GLE	HE	N	14	28	R		O	CA	<2
	8/23/2009	GLE	HF	N	20	27	R	P	C	CA	109
	9/13/2009	GLE	HE	CL	15	28	R		O	CA	36
	10/4/2009	GLE	HF		15	30	R	P	C	CA	29
12/2/2009	FP	HE	CL	6	26	R		O	CA	<2	
WU039.00	2/18/2009	FP	LF	W	0	29	R		O	A	<2
	3/23/2009	EXT	HF	N	-1	22	R		O	A	<2
	5/11/2009	FP	F	CL	9	22	R		O	A	18
	8/19/2009	AB	HF	NW	17	28	R		O	A	18
	9/15/2009	MLP	HF	CL	16	30	R	P	O	A	2
	10/6/2009	EXT	F	SW	14	28	R		O	A	56
WU040.00	2/18/2009	FP	LF	CL	1	30	R		O	A	<2
	3/23/2009	EXT	HF	N	0	25	R		O	A	<2
	5/11/2009	FP	F	CL	9	26	R		O	A	2
	8/19/2009	AB	H	NW	18	28	R		O	A	12
	9/15/2009	MLP	HF	CL	15	30	R	P	O	A	2
	10/6/2009	EXT	F	W	13	28	R		O	A	42
WU041.00	2/18/2009	FP	HF	CL	0	27	R		O	A	<2
	3/23/2009	EXT	H	N	-1	24	R		O	A	<2
	5/11/2009	FP	HF	CL	11	26	R		O	A	<2
	8/19/2009	AB	H	W	20	30	R		O	A	38
	9/15/2009	MLP	H	CL	16	29	R	P	O	A	13
	10/6/2009	EXT	F	N	14	28	R		O	A	8
WU042.00	2/18/2009	FP	HF	S	2	30	R		O	A	<2
	3/23/2009	EXT	H	N	1	25	R		O	A	<2
	5/11/2009	FP	HF	CL	10	26	R		O	A	3.6
	8/19/2009	AB	H	CL	18	29	R		O	A	16
	9/15/2009	MLP	H	CL	16	30	R	P	O	A	<2
	10/6/2009	EXT	HF	CL	14	29	R		O	A	18
WU042.50	2/18/2009	FP	F	CL	0	28	R		C	P	<2
	3/23/2009	EXT	H	N	-1	24	R		C	P	<2
	5/11/2009	FP	HF	CL	10	26	R		C	P	6
	8/19/2009	AB	H	CL	18	30	R		O	A	18
	9/15/2009	MLP	H	CL	15	28	R	P	O	A	4



Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	10/6/2009	EXT	HF	NW	14	29	R		O	A	52
WU042.70	2/18/2009	FP	F	CL	2	30	R		C	P	<2
	3/23/2009	EXT	H	NE	0	25	R		C	P	<2
	5/11/2009	FP	HF	W	8	26	R		C	P	6
	8/19/2009	AB	H	CL	19	30	R		O	A	28
	9/15/2009	MLP	H	CL	15	29	R	P	O	A	<2
	10/6/2009	EXT	HF	CL	13	29	R		O	A	8
WU043.00	2/18/2009	FP	F	CL	0	18	R		O	A	<2
	3/23/2009	EXT	H	CL	0	18	R		O	A	<2
	5/11/2009	FP	H	CL	11	24	R		O	A	<2
	8/19/2009	AB	H	CL	20	30	R		O	A	2
	9/15/2009	MLP	H	CL	15	29	R	P	O	A	8
	10/6/2009	EXT	HF	W	15	28	R		O	A	8
WU044.00	2/18/2009	FP	F	CL	0	30	R		O	A	<2
	3/23/2009	EXT	HE	NE	-1	24	R		O	A	<2
	5/11/2009	FP	H	CL	10	27	R		O	A	<2
	8/19/2009	AB	HE	W	20	29	R		O	A	36
	9/15/2009	MLP	H	CL	15	29	R	P	O	A	10
	10/6/2009	EXT	HF	NW	13	28	R		O	A	16
WU045.00	2/18/2009	FP	F	S	0	20	R		O	A	4
	3/23/2009	EXT	HE	NE	-1	24	R		O	A	12
	5/11/2009	FP	H	CL	10	26	R		O	A	<2
	8/19/2009	AB	HE	NW	21	30	R		O	A	15
	9/15/2009	MLP	HE	CL	14	26	R	P	O	A	12
	10/6/2009	EXT	HF	N	15	28	R		O	A	148
WU045.50	2/18/2009	FP	F	CL	1	0	R		C	P	<2
	3/23/2009	EXT	H	CL	0	0	R		C	P	<2
	5/11/2009	FP	H	CL	12	20	R		C	P	6
	8/19/2009	AB	HE	CL	20	28	R		C	P	40
	9/15/2009	MLP	HE	CL	15	24	R	P	C	P	66
	10/6/2009	EXT	HF	CL	14	20	R		C	P	20
WU045.70	2/18/2009	FP	F	CL	1	28	R		C	P	<2
	3/23/2009	EXT	HE	CL	1	22	R		C	P	<2
	5/11/2009	FP	H	CL	11	25	R		C	P	2
	8/19/2009	AB	HE	CL	20	28	R		C	P	27
	9/1/2009	MLP	H	CL	15	30	R	P	C	P	5.5
	10/6/2009	EXT	H	SW	15	26	R		C	P	12
WU045.80	2/18/2009	FP	F	CL	0	28	R		O	A	<2
	3/23/2009	EXT	HE	NE	1	24	R		O	A	<2
	5/11/2009	FP	H	CL	11	26	R		O	A	<2
	8/19/2009	AB	HE	CL	19	30	R		O	A	16
	9/15/2009	MLP	HE	CL	15	30	R	P	O	A	6



Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	10/6/2009	EXT	H	CL	14	29	R		O	A	8
WU046.00	2/18/2009	FP	F	CL	1	30	R		C	P	<2
	3/23/2009	EXT	HE	CL	0	23	R		C	P	<2
	5/11/2009	FP	H	CL	10	27	R		C	P	2
	8/19/2009	AB	HE	NW	19	29	R		C	P	12
	9/15/2009	MLP	HE	CL	15	28	R	PW	C	P	16
	10/6/2009	EXT	H	NW	13	29	R		C	P	11
WU047.00	2/18/2009	FP	F	SE	2	30	R		O	A	<2
	3/23/2009	EXT	E	CL	1	27	R		O	A	<2
	5/11/2009	FP	HE	W	10	28	R		O	A	<2
	8/19/2009	AB	E	NW	20	30	R		O	A	18
	9/15/2009	MLP	HE	CL	15	30	R	P	O	A	<2
	10/6/2009	EXT	H	NW	13	30	R		O	A	12
WU048.00	2/18/2009	FP	F	CL	1	29	R		O	A	<2
	3/23/2009	EXT	E	CL	1	24	R		O	A	<2
	5/11/2009	FP	HE	W	11	24	R		O	A	<2
	8/19/2009	AB	E	NW	21	28	R		O	A	80
	9/15/2009	MLP	HE	CL	15	31	R	P	O	A	8
	10/6/2009	EXT	H	NW	15	25	R		O	A	33
WU048.50	3/23/2009	EXT	E	NE	1	4	R		O	A	<2
	5/11/2009	FP	HE	W	9	28	R		O	A	2
	6/3/2009	EXT	E	CL	17	17	R		O	A	15
	8/19/2009	AB	E	NW	22	26	R		O	A	100
	9/15/2009	MLP	E	CL	15	28	R	P	O	A	29
	10/6/2009	EXT	H	NW	16	20	R		O	A	106
WU048.80	2/18/2009	FP	F	CL	3	31	R		C	P	<2
	3/23/2009	EXT	E	NE	2	30	R		C	P	<2
	5/11/2009	FP	HE	W	10	29	R		C	P	2
	8/19/2009	AB	E	CL	19	30	R		C	P	4
	9/15/2009	MLP	E	CL	14	30	R	P	C	P	<2
	10/6/2009	EXT	HE	W	14	30	R		C	P	16
WU050.00	2/18/2009	FP	F	SE	3	31	R		C	P	<2
	3/23/2009	EXT	E	NE	2	31	R		C	P	<2
	5/11/2009	FP	HE	W	12	28	R		C	P	<2
	8/19/2009	AB	E	CL	21	30	R		C	P	66
	9/15/2009	MLP	E	CL	15	31	R	P	C	P	<2
	10/6/2009	EXT	HE	CL	14	31	R		C	P	<2
WU055.50	5/4/2009	FP	E	S	7	30	R		C	P	<2
	6/2/2009	FP	E	NW	5	32	R		C	P	<2
	8/10/2009	FP	F	S	13	30	R		C	P	<2
	9/21/2009	AB	F	CL	10	32	R		C	P	<2
	10/5/2009	FP	F	CL	13	31	R		C	P	2



Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	11/23/2009	FP	LF	CL	8	30	R		C	P	<2
WU056.00	5/4/2009	FP	LE	CL	5	28	R		O	A	<2
	6/2/2009	FP	LE	N	8	30	R		O	A	<2
	8/10/2009	FP	H	S	14	30	R		O	A	<2
	9/21/2009	AB	H	CL		32	R		O	A	<2
	10/5/2009	FP	HE			31	R		O	A	2
	11/23/2009	FP	F	CL	8	28	R		O	A	<2
WU056.50	5/4/2009	FP	E	S	7	30	R		C	P	<2
	6/2/2009	FP	E	NW	6	30	R	W	C	P	<2
	8/10/2009	FP	F	S	14	30	R		C	P	<2
	9/21/2009	AB	F	CL	10	32	R		C	P	<2
	10/5/2009	FP	F	CL	12	31	R		C	P	<2
	11/23/2009	FP	LF	CL	8	30	R		C	P	<2
WU057.00	5/4/2009	FP	E	S	7	30	R		C	P	<2
	6/2/2009	FP	E	NW	6	30	R		C	P	<2
	8/10/2009	FP	F	S	13	30	R		O	A	<2
	9/21/2009	AB	F	CL	10	32	R		O	A	<2
	10/5/2009	FP	F	CL	13	31	R		O	A	<2
	11/23/2009	FP	LF	CL	8	30	R		O	A	<2
WU058.00	5/4/2009	FP	E	S	8	30	R		O	A	<2
	6/2/2009	FP	E	NW	6	32	R		O	A	<2
	8/10/2009	FP	F	S	13	30	R		O	A	2
	9/21/2009	AB	F	CL	10	32	R		O	A	<2
	10/5/2009	FP	F	CL	12	31	R		O	A	4
	11/23/2009	FP	LF	CL	8	30	R		O	A	<2
WU059.00	5/4/2009	FP	E	S	7	30	R		C	P	2
	6/2/2009	FP	E	CL	6	30	R		C	P	<2
	8/10/2009	FP	F	S	13	30	R		C	P	<2
	9/21/2009	AB	F	CL	9	32	R		C	P	<2
	10/5/2009	FP	F	CL	12	31	R		C	P	<2
	11/23/2009	FP	F	CL	8	30	R		C	P	2
WU060.00	5/4/2009	FP	E	S	6	30	R		O	A	<2
	6/2/2009	FP	E	CL	6	30	R		O	A	<2
	8/10/2009	FP	F	S	14	30	R		O	A	<2
	9/21/2009	AB	F	CL		32	R		O	A	<2
	10/5/2009	FP	F	W	12	32	R		O	A	<2
	11/23/2009	FP	F	CL	8	32	R		O	A	<2
WU061.00	5/4/2009	FP	E	S	8	32	R		O	A	<2
	6/2/2009	FP	E	NW	6	30	R		O	A	<2
	8/10/2009	FP	F	S	13	30	R		O	A	<2
	9/21/2009	AB	F	CL		32	R		O	A	<2
	10/5/2009	FP	F	W	11	31	R		O	A	<2



Station	Date	Collector	Tide	Wind	Temp	Salin	Strat	Adv	Status	Class	MFCOL
	11/23/2009	FP	F	CL	8	32	R		O	A	<2