GROWING AREA WM

Kennebec River

ANNUAL REVIEW for 2008

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APPROVAL

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TABLE OF CONTENTS

Executive Summary 5
Growing Area Description 5
Current Classification(s) 6
Activity during Review Period 6
Current Management Plan(s) for Conditional Area(s) 7
Current Annual Review of Management Plan(s) 7
Water Quality Review and Discussion 7
Recommendations for Classification Changes 14
Shoreline Survey Activity 16
Aquaculture/Wet Storage Activity 17
Classification Changes Required and Requested 17
Summary 17
Appendix A. Review of Management Plan for Atkins Bay, 2008 18
Appendix B. Review of Management Plan for Wyman Bay and Squirrel Point- Parker Head Flats Seasonal Conditionally Approved Areas, 2008 20
Appendix D. Key to Water Quality Table Headers 24
Appendix E. Growing Area WM 2008 Data 25
Appendix F. Kennebec River SRS and Adverse Data for River Discharge Assessment, 2002-2008 31

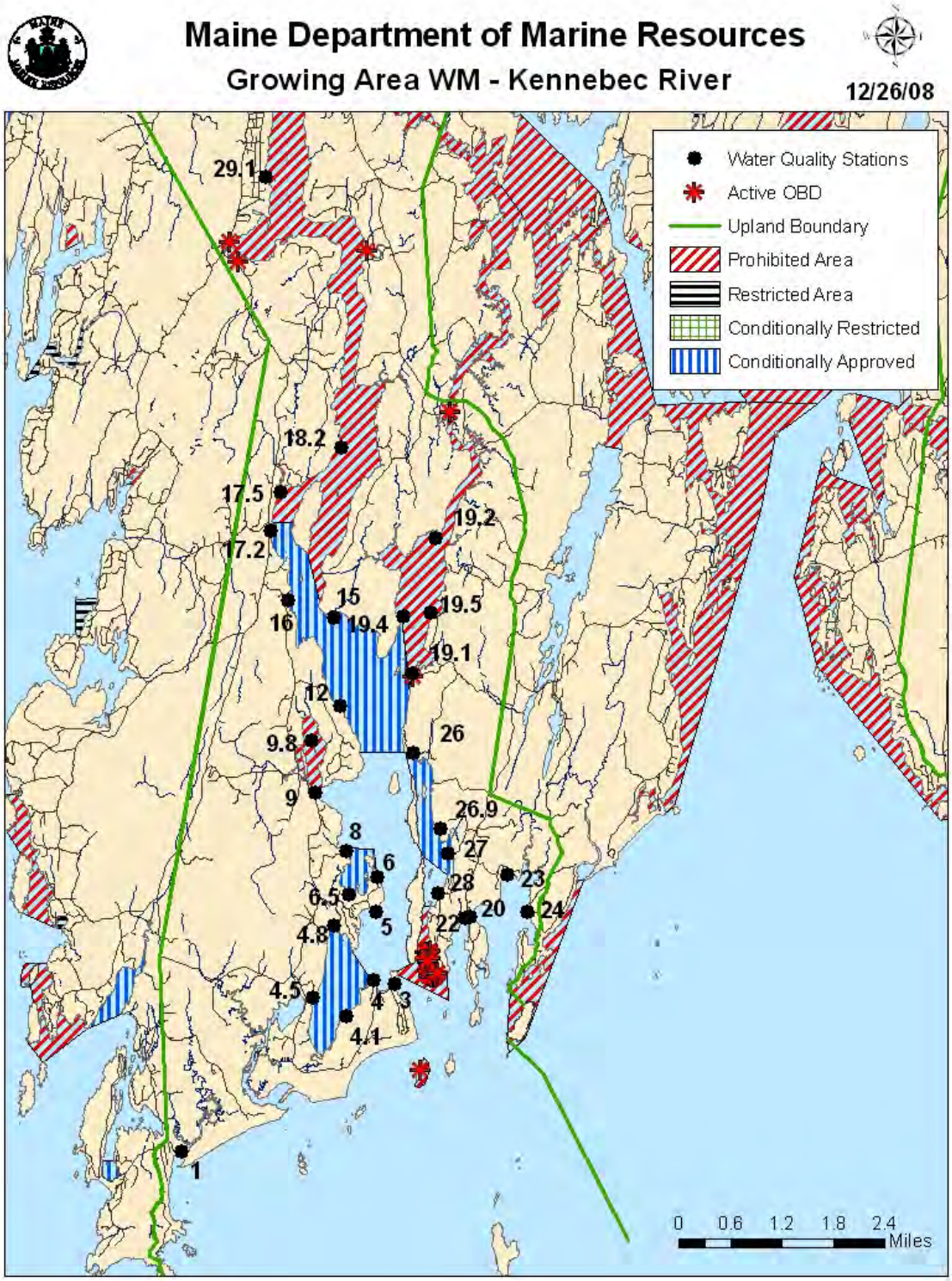
LIST OF TABLES

Table 1. Growing Area WM Fecal Coliform Report, 2003-2008 8
Table 2. Squirrel Point/Parker Head and Cox Head Conditionally Approved Stations and Boundary Stations, Open Status 01/01-09/30, 2003-2008 9
Table 3. Todd Bay Seasonal Conditionally Approved Stations, Open Status 01/01-08/31, 2003-2008 9
Table 4. Atkins Bay Rainfall/Seasonal Conditionally Approved Stations, Open Status, 2003-2008 10
Table 5. WM Sampling Effort for 2008 10
Table 6. Geomean and P90 scores, Year Round Data, All SRS data collected at less than 30,000 cfs 14
Table 7. Geomean and P90 scores, Atkins Bay, All SRS data collected at less than 30,000 cfs AND during Open Status based on Rainfall 15
Table 8. Squirrel Point/Parker Head and Cox Head Conditionally Approved Stations and Boundary Stations, All SRS data collected at less than 30,000 cfs AND during Seasonal Open Status 01/01-09/30 16
Table 9. Geomean and P90 scores, Todd Bay, All SRS data collected at less than 30,000 cfs AND during Open Status based on Season, 1/1-8/31 16
Table 10. Todd Bay Seasonal Conditionally Approved Stations, Open Status 01/01-08/31, 2003-2008 23

LIST OF FIGURES

Figure 1. Growing Area WM, with Active Water Stations 4
Figure 2. P90 Scores for Approved Stations in WM, 2006-2008 12
Figure 3. P90 Scores for Stations in the Lower Kennebec Seasonal Conditional Area 12
Figure 4. P90 Scores for Todd Bay Seasonal Conditional Area 13
Figure 5. P90 Scores for Stations in the Atkins Bay Seasonal/Rainfall Conditional Area 13

Figure 1. Growing Area WM, with Active Water Stations



Executive Summary

This is an annual report for growing area WM written in compliance with the requirements of the 2005 Model Ordinance and the National Shellfish Sanitation Program. The next triennial report is due in 2010; the next sanitary survey report is due in 2011.

During the 2008 review year, no stations were added or deactivated. There were no major changes in pollution noted during the current review year; no over board discharges (OBD) were removed in 2008. At the end of 2008, multiple approved and conditionally approved stations failed to meet the approved standard. As a result, the entire river, north of Popham Beach and including the flats of Sagadahoc Bay and Heal Eddy is being reclassified to conditionally approved, based on river discharge. The management plan for this new conditional area will require that the river close when the combined flow of the Kennebec and the Androscoggin rivers exceeds 30,000 cubic feet per second (cfs).

Growing Area Description

Growing area WM is the lower Kennebec River, and includes that portion of the river which passes through the towns of Phippsburg, Bath, Woolwich, Arrowsic, and Georgetown (Figure 1). This portion of the river begins at the mouth of Merrymeeting Bay, located between West Chops Pt., North Bath and Chops Pt., Woolwich. The distance from the Chops downstream to the nearest open shellfish growing beds is approximately 12 miles, and 17 miles to the mouth of the river at Popham Beach, Phippsburg.

The Kennebec River is the second largest river in the state of Maine. The Androscoggin River, the third largest river, drains into the Kennebec River, and the two rivers come together in Merrymeeting Bay. Together, these two rivers have a drainage area of 8,600 squares miles, which is more than 1/5 of the total state acreage.

There are eight sewage treatment plants (STP) located in the Kennebec River watershed, with some located as far as Waterville on the Kennebec River, and Lewiston on the Androscoggin River. The Bath STP is the only facility located below the “Chops” – the mouth of Merrymeeting Bay, which marks the confluence of the Kennebec and Androscoggin Rivers. This location is approximately seven miles north of the closest shellfish growing beds which are open for shellfish harvesting. The towns adjacent to approved shellfish growing beds in area WM are Phippsburg, Woolwich, Arrowsic, and Georgetown; these towns have no municipal sewage treatment facilities. All disposal systems located in those towns are private inground systems, licensed overboard discharges, outhouses or composting toilet systems. There are no marinas south of the Bath Bridge. There are only two working piers which provide support to local lobstering and fishing activities. These are located in at the mouth of Atkins Bay and at the mouth of Back River.

Current Classification(s)

Shellfish growing Area WM currently has shellfish areas classified as:

Approved (8 stations: WM 1, 3, 5, 20, 22, 23, 24, 26 (boundary, part of Todd Bay CA area), and 28)

Conditionally Approved (13 stations):

20B. Lower Kennebec Seasonal Conditional Areas; Phippsburg, Arrowsic and West Georgetown (3 stations: WM 12, 15, and 16)
20C. Cox Head Seasonal Conditional Area, Phippsburg (3 stations: WM 6, 6.5 and 8)
20D. Todd Bay Seasonal Conditional Area, Georgetown (3 stations: WM 26, 26.9 and 27)
20E. Atkins Bay, Seasonal/Rainfall Conditional Area, Phippsburg (4 stations: WM 4 (boundary with Approved Area), 4.1, 4.5, and 4.8)

Prohibited (10 stations)

20A1. Kennebec River, Georgetown, Woolwich, Phippsburg, Arrowsic and West Georgetown (8 stations: WM 17.2 (boundary with CA), 17.5, 18.2, 19.1 (boundary with CA), 19.2, 19.4 (boundary with CA), 19.5 and 29.1); due to non-point source pollution
20A.2. Mill Pond, Phippsburg (2 stations: WM 9 (boundary with A) and 9.8); due to point and non-point source pollution
20A.3. Lower Kennebec River, Georgetown and Phippsburg (no stations, closed due to the presence of OBDs)
20A.4. Wood Island (no stations, closed due to presence of OBD)

Please visit the Maine DMR website to view DMR Regulation 95.07F, Closed Area No. 20, Kennebec River and Tributaries:

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

Activity during Review Period

The following classification changes occurred in 2008:

February 14, 2008: amendment closes the rainfall conditional area in Atkins Bay, Phippsburg for the harvest of shellfish.

February 28, 2008: amendment reopens the rainfall conditional area in Atkins Bay, Phippsburg and reclassifies Todd Bay as conditionally approved with a closed season of 9/1-12/31.

March 10, 2008: amendment closes the rainfall conditional area in Atkins Bay, Phippsburg for the harvest of shellfish.

March 27, 2008: amendment reopens the rainfall conditional area in Atkins Bay, Phippsburg.

April 29, 2008: amendment closes the rainfall conditional area in Atkins Bay, Phippsburg for the harvest of shellfish.

May 13, 2008: amendment reopens the rainfall conditional area in Atkins Bay, Phippsburg.

November 26, 2008: amendment closes the rainfall conditional area in Atkins Bay, Phippsburg for the harvest of shellfish.

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

There currently are four conditionally managed areas in Growing Area WM:

1) Seasonal rainfall area in Atkins Bay, Phippsburg; (closes on $\geq$ 1.5"/24 hours from 10/1-5/14), Stations WM 4.0, 4.1, 4.5, and 4.8.
2) Seasonal area at Squirrel Point-Parker Head Flats, Lower Kennebec River (open 1/1-9/30), stations WM 12, 15 and 16.
3) Seasonal area at Cox Head, Lower Kennebec River (open 1/1-9/30), stations WM 6, 6.5 and 8.
4) Seasonal area at Todd Bay, Georgetown (open 1/1 – 8/31), stations WM 26, 26.9 and 27.

Management plans for all conditional areas can be found in DMR's central files. Atkins Bay rainfall management plan requires reporting by the Town of Phippsburg; this plan was last updated on October 9, 2008.

Current Annual Review of Management Plan(s)

In 2008, the Atkins Bay seasonal/rainfall conditional area had 4 rainfall closures. Per the management plan, Maine DMR was notified that rainfall had exceeded 1.5 inches in 24 hours, between October 1st and May 14th, and the appropriate closures were made. Water samples were taken prior to reopening of this conditional area.

In 2008, the two seasonal conditional areas in the lower Kennebec River opened on January 1st, as scheduled and closed September 1st (Todd Bay Georgetown) and October 1st (Phippsburg).

The complete reviews of the management plans for the conditional areas in shellfish growing area WM are located in Appendices A, B and C.

Water Quality Review and Discussion

Table 1 lists all active approved and prohibited stations in Growing Area WM, with their respective Geomean and P90 calculations for 2008. Please refer to Appendix D for a key to interpreting the headers on the columns of Table 1. The approved and restricted standards for each station are also displayed in Table 1; stations which exceeded their NSSP classification

standard are highlighted in yellow. 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 verses 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.

Five approved stations, WM 5, 20, 23, 24 and 28, and two stations that are not classified as approved but serve as boundary stations with approved areas with approved areas, WM 8 and 9, exceeded their NSSP classification standard in 2008, and must be downgraded in classification. A recommendation for a conditional area based on river discharge is presented in a later section of this report. The remaining approved stations met their NSSP classification.

Table 1. Growing Area WM Fecal Coliform Report, 2003-2008

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WM001.00	A	30	15	4.9	0.47	240	19.8	39	221
WM003.00	A	30	17	5.7	0.53	125	27.6	38	212
WM004.00	CA-boundary with A	30	21	6	0.57	134	33.4	35	195
WM005.00	A	30	17	7.4	0.60	122	42.7	38	212
WM008.00	CA-boundary with A	30	18	10.3	0.58	140	57.5	37	208
WM009.00	P-boundary the A	30	17	13.0	0.56	142	66.8	38	212
WM009.80	P	30	16	15.8	0.51	116	71.3	38	217
WM017.20	P	30	16	14.6	0.53	140	69.4	38	217
WM017.50	P	30	16	21.4	0.67	240	153.7	38	217
WM018.20	P	30	16	21.3	0.57	154	112.8	38	217
WM019.10	P-boundary with CA	30	15	14.3	0.61	360	85.8	39	221
WM019.20	P	30	21	10.9	0.63	160	70.0	36	196
WM019.40	P	30	21	10.6	0.63	240	68.7	36	196
WM019.50	P	30	15	11.0	0.66	260	77.9	39	221
WM020.00	A	30	16	7.4	0.61	280	44.3	38	217
WM022.00	A	30	17	6.2	0.55	220	30.9	38	212
WM023.00	A	30	16	6.8	0.62	220	42.0	38	217
WM024.00	A	30	16	6.6	0.65	460	45.1	38	217
WM026.00	CA-boundary with A	30	17	7	0.56	96	36.7	37	212
WM028.00	A	30	15	7.4	0.57	240	40.0	39	221

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WM029.10	P	30	15	17.3	0.59	240	97.4	39	221

Table 2 lists geometric mean and P90 scores for all seasonal conditionally approved stations in Squirrel Point/Parker Head, and Wyman Bay/Cox Head; these two areas are seasonally open from January 1 to September 30. Data for conditionally approved stations reflects only the open status. All stations in Wyman Bay (WM 6, 6.5 and 8) met their NSSP standard in the open status. Station WM 8 serves as a boundary station between the seasonal conditionally approved area and the approved area; it did not meet the approved standard when using year- round data. Conditional stations WM 12, 15, 16 and boundary stations WM 19.1 and 19.4 did not meet the approved standard in the open status, and must be downgraded in classification. A recommendation for a conditional area based on river discharge is presented in a later section of this report. The remaining approved stations met their NSSP classification.

Table 2. Squirrel Point/Parker Head and Cox Head Conditionally Approved Stations and Boundary Stations, Open Status 01/01-09/30, 2003-2008

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WM006.00	CA	30	13	6.1	0.49	116	25.3	40	230
WM006.50	New	14	13	5.5	0.56	112	29.5	32	170
WM008.00	CA	30	12	6.3	0.51	140	28.2	41	235
WM012.00	CA	30	16	7.5	0.56	112	39.1	38	217
WM015.00	CA	30	16	8.2	0.63	240	51.8	38	217
WM016.00	CA	30	16	9.5	0.52	116	43.3	38	217
WM017.20	P-boundary	30	10	7.7	0.44	94	28.1	42	245
WM019.10	P-boundary with CA	30	9	11.8	0.61	360	71.8	43	250
WM019.40	P-boundary with CA	30	15	8.1	0.56	240	42.2	39	221
WM026.00	CA	30	12	6.7	0.54	96	33.0	41	235

Table 3 lists all conditionally approved stations in the new, seasonal conditional area in Todd Bay, with their respective Geomean and P90 calculations for 2008. Data for conditionally approved stations reflects only the open status. All stations in this conditional area met the approved standard during open status in 2008.

Table 3. Todd Bay Seasonal Conditionally Approved Stations, Open Status 01/01-08/31, 2003-2008

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WM026.00	CA	30	9	7.0	0.52	96	32.7	43	250
WM026.90	CA	26	9	6.0	0.50	152	26.9	42	243
WM027.00	CA	25	9	6.6	0.51	160	29.8	42	241

Table 4 lists all conditionally approved stations in Atkins Bay seasonal/rainfall conditional area with their respective Geomean and P90 calculations for 2008. Data for conditionally approved stations reflects only the open status. None of the stations met the approved standard during open status in 2008 and must be downgraded in classification. A recommendation for a more conservative conditional area management plan is presented later in this report.

Table 4. Atkins Bay Rainfall/Seasonal Conditionally Approved Stations, Open Status, 2003-2008

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WM004.00	CA	30	16	7.4	0.62	134	45.6	38	217
WM004.10	CA	30	16	9.4	0.63	136	59.4	38	217
WM004.50	CA	30	16	7.0	0.61	240	41.8	38	217
WM004.80	CA	30	16	7.2	0.58	93	39.5	38	217

In 2008, all approved and prohibited stations were sampled at least 6 times following the systematic random sample (SRS) schedule (Table 5). All conditionally approved stations, with the exception of WM 27, were sampled at least 6 times in the open status. Conditionally approved station 27 was reclassified from prohibited to conditionally approved on February 28, 2008; it was sampled once in the closed status (as prohibited station) and 5 times in open status, after the reclassification.

Table 5. WM Sampling Effort for 2008

Station	Class	Adverse	Random		Total	Comments
		Closed	Closed	Open		
WM001.00	A		1	6	7	
WM003.00	A	18		6	24	Flood Station
WM004.00	CA	9	1	7	17	
WM004.10	CA	12	1	7	20	
WM004.50	CA	18	1	7	26	
WM004.80	CA	20	1	7	28	
WM005.00	A	3		6	9	
WM006.00	CA	4	2	6	12	
WM006.50	CA	4	2	6	12	
WM008.00	CA	1	2	6	9	
WM009.00	P		6		6	
WM009.80	P		6		6	
WM012.00	CA	4	2	6	12	
WM015.00	CA	4	2	6	12	
WM016.00	CA	4	2	6	12	
WM017.20	P		6		6	
WM017.50	P		6		6	
WM018.20	P		6		6	
WM019.00	P	1			1	
WM019.10	P	2	6		8	
WM019.20	P	1	8		9	
WM019.40	P	1	8		9	
WM019.50	P		6		6	
WM020.00	A			6	6	
WM022.00	A			6	6	
WM023.00	A			6	6	
WM024.00	A			6	6	
WM026.00	A	3			20	Reclassified from approved

Station	Class	Adverse	Random		Total	Comments
		Closed	Closed	Open		
	CA	8	3	6		to conditionally approved on 2.28.08
WM026.90	CA	3	3	6	12	
WM027.00	CA	3	3	5	12	Reclassified from prohibited to conditionally approved on 2.28.08
	P		1			
WM028.00	A	19		6	25	Flood Station
WM029.10	P	3	6		9	

Figures 2 through 5 show P90 trends for water quality stations in growing area WM, over the last three review years. 2008 was an exceptionally rainy summer, and most stations, regardless of classification showed an upward trend in scores, with many stations surpassing their classification standard limit. With the exception of station WM 1, all approved stations showed a significant increase in scores, with stations WM 5, 20, 23, 24 and 28 surpassing the variability standard (Figure 2). All Cox Head and Squirrel Point conditionally approved ad boundary stations showed an increase in scores, with six of the ten stations surpassing the approved standard in 2008 (Figure 3). Surprisingly, Todd Bay stations showed little change in 2008, with all three stations continuing to meet the approved standard (Figure 4). All of the stations in Atkins Bay conditional area showed a significant rise in scores, and all four stations failed to meet the approved standard. The increase in rainfall over the review year, and consequently of both local overland run-off and river discharge contributed to these higher water quality scores. After a review of river discharge data in relation to water quality scores over the past eight years, a new management plan for the Kennebec River is proposed, and is described in detail in the “Recommendations for Classification Changes” section.

Figure 2. **P90 Scores (as percent of approved standard) for Approved Stations in WM, 2006-2008**

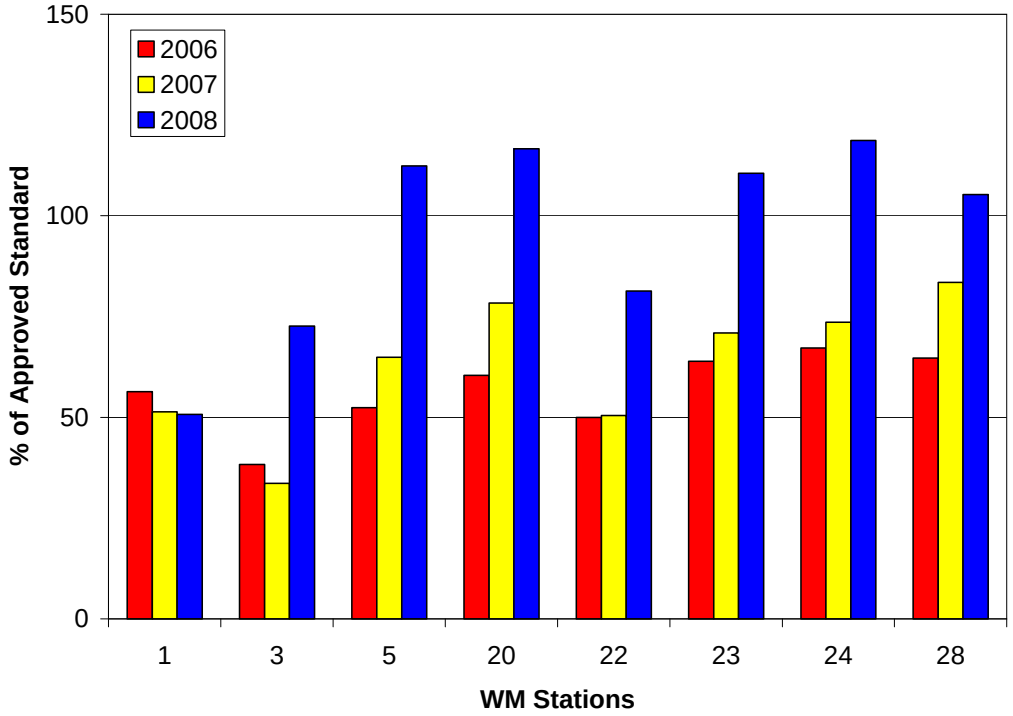


Figure 3. P90 Scores (as percent of approved standard) for Stations in the Lower Kennebec Seasonal Conditional Area, Open Status Data, 2006-2008

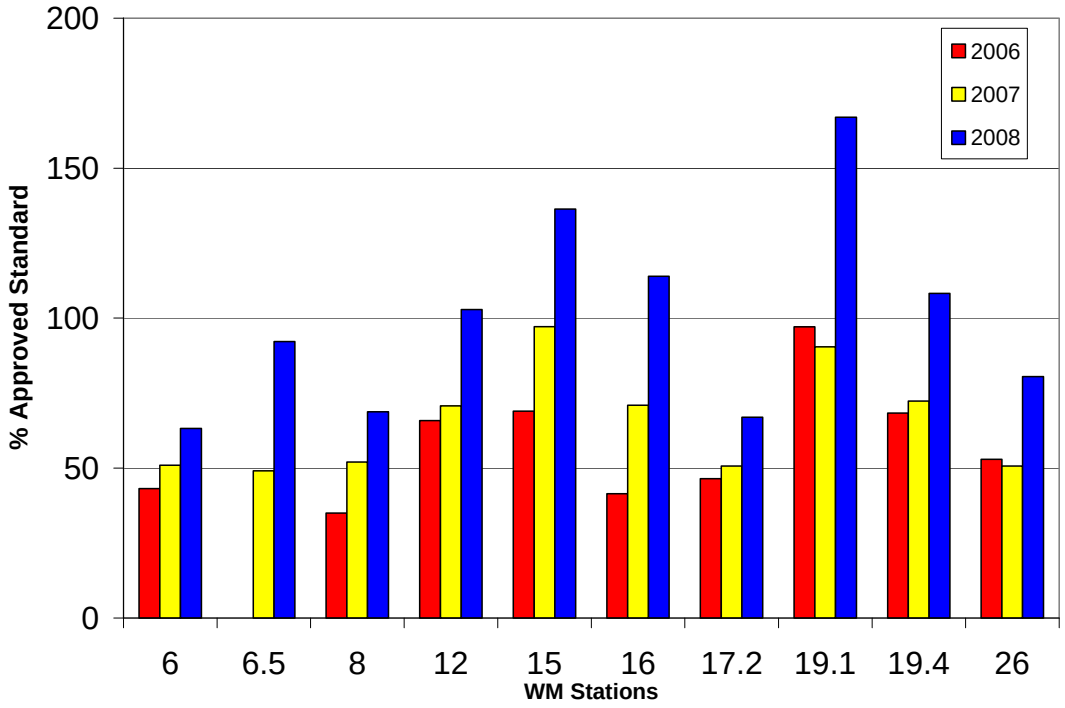


Figure 4. P90 Scores (as percent of approved standard) for Todd Bay Seasonal Conditional Area, Open Status, 2006-2008

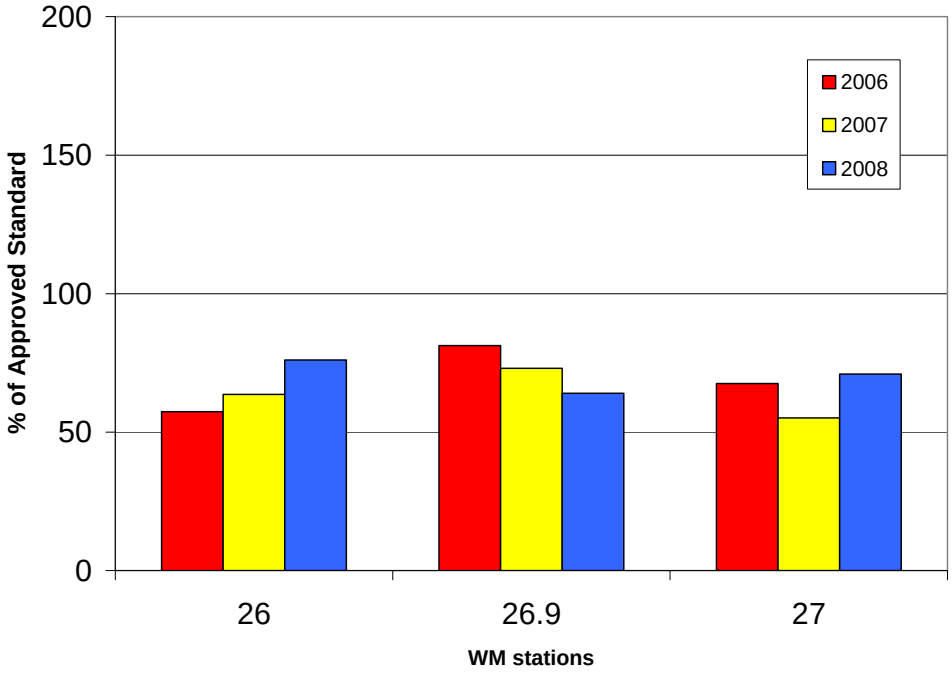
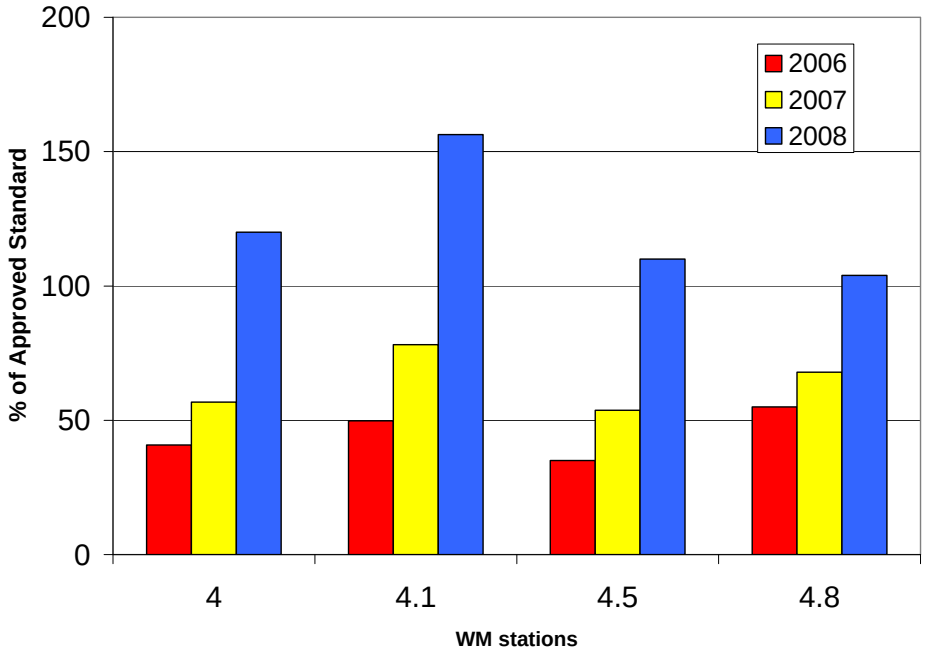


Figure 5. P90 Scores (as percent of approved standard) for Stations in the Atkins Bay Seasonal/Rainfall Conditional Area, Open Status, 2006-2008



Recommendations for Classification Changes

At the end of 2008, multiple approved and conditionally approved stations failed to meet their classification standard. A data analysis was completed to determine the impact of river discharge on fecal scores; data from USGS river gauges was used in completing this assessment. At the end of 2008 and the initial three months of 2009, DMR and US FDA worked on a recommendation for establishing a conditional area management plan for river discharge rates; this plan is being presented in this section of the report.

There is a significant presence of both point and non-point pollution sources in the Kennebec and Androscoggin rivers' watersheds, with the majority of these sources located north of Merrymeeting Bay. These pollution sources include eight municipal waste water treatment plants (6 with combined sewer overflows), and multiple agricultural farms, as well as multiple acres of impervious surfaces located in urban and suburban areas of the watersheds. After heavy rainfall, pollution from these sources may be transported to the Kennebec and Androscoggin rivers as overland run-off, or discharged directly into the river via combined sewer overflows and WWTP bypasses. Ultimately, fecal pollution from these point and non-point sources are transported downriver, and eventually to the lower Kennebec shellfish beds.

The lower Kennebec River sustains water quality impacts from rainfall events which occur throughout the entire Kennebec and Androscoggin rivers' watersheds. The impact from these rain events on water quality is cumulative and therefore cannot always be predicted by monitoring localized rain events at rain stations located in the lower Kennebec River. Accounting for the volume of water that drains the entire watershed by managing the shellfish flats on changes in the rates of river discharge provides an opportunity to consider pollution transport from upriver and its cumulative effect on water quality in growing area WM.

River discharge will be measured using daily data provided by the USGS's National Water Information System, available from http://waterdata.usgs.gov/nwis. Specifically, river discharge will be calculated by summing the daily mean discharge values provided by the Kennebec and Androscoggin River gauges, located in North Sydney and Auburn, Maine, respectively.

Table 6 shows geometric means and P90 scores for all approved, conditionally approved and boundary stations, calculated using SRS data collected when the sum of the Kennebec and Androscoggin River daily discharge values was less than 30,000 cfs on day of collection and within 7 days previous to sample collection; stations highlighted in yellow did not meet their NSSP standard when using the last 30 SRS data points, without restricting the dataset to discharge values less than 30,000 cfs. All calculations were completed using SRS data collected year round. Using this dataset, all approved stations showed a significant reduction in their P90 scores, and all met the approved classification standard.

Table 6. Geomean and P90 scores, Year Round Data, All SRS data collected at less than 30,000 cfs

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Appd_Std	Notes
WM004.00	CA	30	11	4.1	0.39	43	12.9	41	Conditional on Rainfall
WM004.10	CA	30	10	4.9	0.39	43	15.4	42	
WM004.50	CA	30	10	4.1	0.33	25	11.1	42	

Station	Class	Count	MFCount	GM	SDV	MAX	P90	Appd_Std	Notes
WM004.80	CA	30	11	4.2	0.42	75	14.3	41	
WM005.00	A	30	8	4.0	0.32	43	10.3	43	
WM006.00	CA	30	9	6.6	0.48	93	27.4	43	Conditional on Season-boundary
WM006.50	New	10	9	4.3	0.35	14	11.9	33	
WM008.00	CA	30	7	5.2	0.35	23	14.4	44	
WM009.00	P	30	8	6.8	0.40	43	22.2	43	Boundary Station
WM012.00	CA	30	12	6.7	0.48	93	27.2	41	Conditional on Season
WM015.00	CA	30	12	6.3	0.50	93	27.2	41	
WM016.00	CA	30	12	7.8	0.50	240	32.3	41	
WM017.20	P	30	7	7.9	0.42	93	27.2	44	Boundary Station
WM019.10	P	30	9	7.5	0.46	93	29.4	43	Boundary Station
WM019.40	P	30	11	6.9	0.46	93	26.6	41	Boundary Station
WM020.00	A	30	10	4.3	0.35	24	12.0	42	
WM022.00	A	30	10	4.6	0.43	43	16.1	42	
WM023.00	A	30	10	4.9	0.49	93	20.8	42	
WM024.00	A	30	10	4.3	0.50	460	18.9	42	
WM026.00	CA	30	10	5.5	0.49	50	23.1	42	Boundary Station
WM026.90	CA	30	10	5.3	0.60	460	31.1	42	Conditional on Season
WM027.00	CA	30	10	6.2	0.59	460	35.1	42	
WM028.00	A	30	9	5.0	0.40	43	16.5	43	

Table 7 shows Atkins Bay stations which are conditional on rainfall, with the data set restricted to results obtained when the daily discharge values were less than 30,000 cfs on day of sample collection and within 7 days previous to samples collection, and using only open status data based on rainfall conditional closures. All stations met the approved standard when using this dataset. However, the scores were very similar when comparing to those obtained when using only river discharge to select the water quality scores to be used in this calculation. In the future, the need to for a rainfall conditional management plan for this area should be re-evaluated.

Table 7. Geomean and P90 scores, Atkins Bay, All SRS data collected at less than 30,000 cfs AND during Open Status based on Rainfall

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD
WM004.00	CA	30	9	4.29	0.38	43	13.0	43
WM004.10	CA	30	8	4.65	0.39	43	14.7	43
WM004.50	CA	30	8	4.02	0.32	25	10.3	43
WM004.80	CA	30	9	4.36	0.42	75	15.0	43

Table 8 shows the P90 report for stations located in the Squirrel Point/Parker Head and Cox Head Conditionally Approved Seasonal area, with the data set restricted to results obtained when the daily discharge values were less than 30,000 cfs on day of sample collection and within 7 days of samples collection, and using only open status data based on season (January through September). All stations met the approved standard when using this dataset, and most

stations showed lower P90 scores in comparison to those calculated in Table 6 (year round data).

Table 8. Squirrel Point/Parker Head and Cox Head Conditionally Approved Stations and Boundary Stations, All SRS data collected at less than 30,000 cfs AND during Seasonal Open Status 01/01-09/30

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD
WM006.00	CA	30	8	5.5	0.36	43	16.0	43
WM006.50	New	8	7	3.7	0.36	14	10.6	32
WM008.00	CA	30	6	4.5	0.29	16	10.5	45
WM012.00	CA	30	10	6.0	0.44	93	21.8	42
WM015.00	CA	30	10	6.5	0.48	43	26.9	42
WM016.00	CA	30	10	6.0	0.39	46	19.1	42
WM017.20	P-boundary	30	6	6.8	0.36	93	19.4	45
WM019.10	P-boundary	30	7	7.8	0.46	93	30.4	44
WM019.40	P-boundary	30	9	6.9	0.43	93	24.5	43

Table 9 shows the P90 report for stations located in the Todd Bay Conditionally Approved Seasonal area, with the data set restricted to results obtained when the daily discharge values were less than 30,000 cfs on day of sample collection and within 7 days of samples collection, and using only open status data based on season (January through August). All stations met the approved standard when using this dataset, and stations WM 26 and 27 showed lower P90 scores in comparison to those calculated in Table 6 (year round data).

Table 9. Geomean and P90 scores, Todd Bay, All SRS data collected at less than 30,000 cfs AND during Open Status based on Season, 1/1-8/31

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD
WM026.00	CA	30	6	6.2	0.47	93	24.9	45
WM026.90	CA	22	6	5.2	0.45	93	19.7	43
WM027.00	CA	21	6	5.3	0.35	23	14.7	43

A complete dataset of all SRS data for growing area WM approved, conditionally approved and boundary stations, as well as the corresponding discharge values on the day of collection and within seven days prior to sample collection, that were used to complete this assessment, is located in DMR growing area WM files, and in Appendix F of this report. The new management plan was implemented in April 2009.

Shoreline Survey Activity

A drive through survey was completed in December 2008. The following changes were observed in Georgetown: Rotunda Hill Rd, new subdivision consisting of 12 lots. Only one house built at present time. The road is steep and has several storm drains that are directing the flow toward the Kennebec side of the road. The drainage is not directly into the Kennebec, but into a stream to the Kennebec. The stream should be monitored as construction activities continue. A new home was also noted on Williams Road, within 500 ft of the shore. In

Phippsburg, the following changes were observed: four new houses are being constructed on Small Point Road, Parker Head Road, Rock Ledge Drive, and Capt. John Parker Road.

Aquaculture/Wet Storage Activity

There are no aquaculture sites or wet storage activity in growing area WM.

Classification Changes Required and Requested

No upward classification changes are presented in this report. A new conditional area is being recommended. This new conditional area, based on river discharge will include all stations located north of Popham Beach (north of station WM 3), and including stations in Sagadahoc Bay and Heal Eddy, that are currently classified as approved and conditionally approved. The new conditional area management plan will require a closure of these areas in the event that the river discharge meets or exceeds 30,000 cfs.

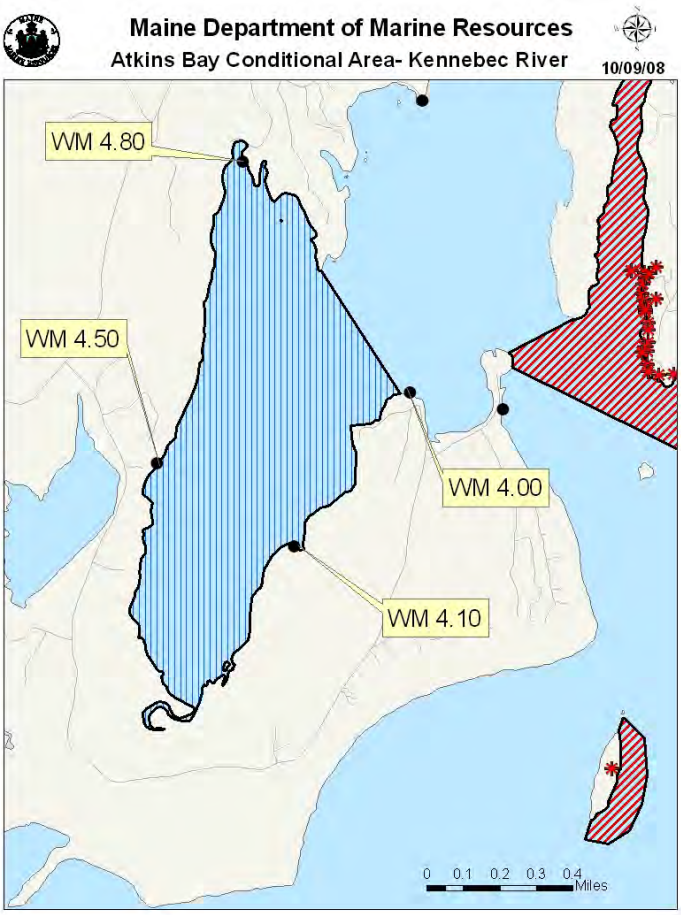
Summary

In 2008, multiple stations throughout this growing area showed a significant increase in fecal scores, with many stations failing to meet their classification standard. As a result of this trend, a data analysis was completed to establish a relationship between river discharge rates and fecal scores. As a result of this analysis, a new management plan was implemented, requiring that the shellfish areas north of Popham Beach and including all flats in Heal Eddy and Sagadahoc Bay be closed when river discharge meets or exceeds a predetermined trigger of 30,000 cfs. This management plan was developed in cooperation with the FDA regional specialist, and implemented in April 2009. In 2009, it is recommended that additional data is collected during the river discharge closure period, in order to determine if select portions of the river may be able to close at a higher river discharge trigger rate.

Appendix A. Review of Management Plan for Atkins Bay, 2008

Scope

A portion of growing area WM is classified as conditionally approved based on rainfall and season. Atkins Bay, located in Phippsburg, shall be closed when rainfall meets or exceeds 1.5 inches in a 24 hour period, between the period of October 1st and May 14th. Water quality in this conditional area is monitored by 4 stations: WM 4 (boundary with approved area, must meet approved standard year round), 4.1, 4.5 and 4.8. All conditionally approved stations in Atkins Bay are sampled 6 times in the open status, following a systematic random sampling schedule.



Compliance with management plan

In 2008, there were 2 rainfall closures: the first occurred on April 17th, with a reopening on May 11th; the second closure occurred on October 12 (occurred as flood closure), with a reopening on October 30th. Per management plan, Maine DMR was notified by phone by the town of Phippsburg. Water samples were collected and analyzed prior to reopening of the areas.

Adequacy of reporting and cooperation of involved persons

In the event that a conditional area closure must be implemented due to rainfall, the management plan for this conditional area requires reporting by the Town of Phippsburg. In 2008, the cooperation between all involved parties was excellent and all necessary notifications were received at appropriate times.

Compliance with approved growing area criteria

All four stations located in Atkins Bay failed to meet the approved standard while in the open status. A new, more conservative management plan is being proposed to address this issue. Please refer to Recommendation for Classification Changes for more information.

Table 1. Atkins Bay Seasonal/Rainfall Conditional Area, Open Status, 2003-2008

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WM004.00	CA	30	16	7.4	0.62	134	45.6	38	217
WM004.10	CA	30	16	9.4	0.63	136	59.4	38	217
WM004.50	CA	30	16	7.0	0.61	240	41.8	38	217
WM004.80	CA	30	16	7.2	0.58	93	39.5	38	217

Water sampling compliance history

In 2008, conditionally approved stations in Atkins Bay were sampled 7 times in the open status and met the sampling frequency requirements set by the NSSP Model Ordinance.

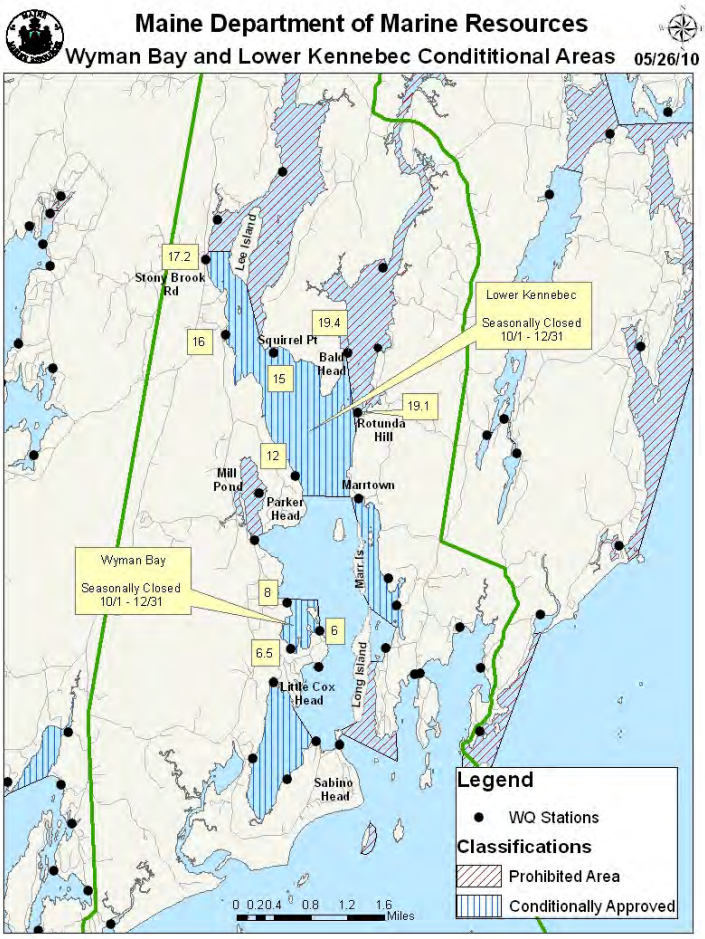
Analysis-Recommendations

The current recommendation is to update the management plan to make more conservative closures based on the rate of river discharge. Please see the recommendation for Classification Change section of this report for a complete description of this new management plan.

Appendix B. Review of Management Plan for Wyman Bay and Squirrel Point- Parker Head Flats Seasonal Conditionally Approved Areas, 2008

Scope

A portion of growing area WM is classified as conditionally approved based on season. The Parker Head and Squirrel Point flats conditional area is based on season. For several years the area has maintained approved water quality from May 15th through September 30th. However, more recent data indicates that the area is able to be classified in the open status for a considerably longer, but different time frame, from January 1st to September 30th. This modification to the open status occurred on October 26, 2007. A new seasonal conditional area, located off Cox Head, Phippsburg, was established in October 26, 2007 with the same open period as the Parker Head/Squirrel Point conditional area. These areas are monitored by nine stations: WM 6, 6.5 and 8 (Wyman Bay), and WM 12, 15, 16, 17.2, 19.1, and 19.4 (Squirrel Point/Parker Head).



Compliance with management plan

In 2008, this seasonal conditional area opened as scheduled, on January 1. The management plan requires that an annual seasonal open status data check is completed prior to the area re-opening. The opening date for this area (January 1) corresponds to the annual data check for the entire growing area. The data check was completed in December 2007.

Adequacy of reporting and cooperation of involved persons

The management plan for this conditional area does not require reporting by non-DMR personnel.

Compliance with approved growing area criteria

The annual review of water quality data for all active conditionally approved stations, as well as boundary stations, in the Lower Kennebec River are shown in Table 1. Five stations located in the lower Kennebec Seasonally conditional area failed to meet the approved standard while in the open status. A new management plan is being proposed to address this issue. Please refer to Recommendation for Classification Changes for more information.

Table 1. Lower Kennebec Seasonal Conditional Area, Open Status, 2003-2008

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WM006.00	CA	30	13	6.1	0.49	116	25.3	40	230
WM006.50	New	14	13	5.5	0.56	112	29.5	32	170
WM008.00	CA	30	12	6.3	0.51	140	28.2	41	235
WM012.00	CA	30	16	7.5	0.56	112	39.1	38	217
WM015.00	CA	30	16	8.2	0.63	240	51.8	38	217
WM016.00	CA	30	16	9.5	0.52	116	43.3	38	217
WM017.20	P-boundary	30	10	7.7	0.44	94	28.1	42	245
WM019.10	P-boundary	30	9	11.8	0.61	360	71.8	43	250
WM019.40	P-boundary	30	15	8.1	0.56	240	42.2	39	221

Water sampling compliance history

All conditionally approved and boundary stations were sampled six times in the open status.

Analysis-recommendations

The current recommendation is to update the management plan to make more conservative closures based on the rate of river discharge. Please see the recommendation for Classification Change section of this report for a complete description of this new management plan.

Appendix C. Review of Management Plan for Todd Bay, 2008

Scope

A portion of growing area WM- Todd Bay is classified as conditionally approved based on season; these flats are seasonally closed from September 1 to December 31. The conditional management plan for this area was established in February 2008, after station WM 26.9 failed to meet the approved standard at the end of the 2007 review year. The seasonal pollution impact is likely due to the increased presence of migratory birds in this portion of the growing area during the closed status period. Water quality in this conditional area is monitored by 3 stations: WM 26, 26.9 and 27. All conditionally approved stations in Todd Bay are sampled at least 6 times in the open status.

Compliance with management plan

This is a new management plan, was established in February 2008. This management plan requires that an annual seasonal open status data check is completed prior to the area re-opening. The opening date for this area (January 1) corresponds to the annual data check for the entire growing area. In subsequent years, this annual data check will be completed in December.

Adequacy of reporting and cooperation of involved persons

The management plan for this conditional area does not require reporting by non-DMR personnel.

Compliance with approved growing area criteria

The annual review of water quality data for all active conditionally approved stations in the Todd Bay conditional area met the approved standard when in the open status (Table 1).

Table 10. Todd Bay Seasonal Conditionally Approved Stations, Open Status 01/01-08/31, 2003-2008

STATION	CLASS	CNT	MFCNT	GM	SDV	MAX	P90	APPD_STD	RESTR_STD
WM026.00	CA	30	9	7.0	0.52	96	32.7	43	250
WM026.90	CA	26	9	6.0	0.50	152	26.9	42	243
WM027.00	CA	25	9	6.6	0.51	160	29.8	42	241

Water sampling compliance history

Conditionally approved stations WM 26 and 26.9 were sampled 6 times in the open status. Conditionally approved station 27 was reclassified from prohibited to conditionally approved on February 28, 2008; it was sampled once in the closed status (as prohibited station) and 5 times in open status, after the reclassification.

Analysis-recommendations

The current recommendation is to update the management plan to make more conservative closures based on the rate of river discharge. Please see the recommendation for Classification Change section of this report for a complete description of this new management plan.

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. Growing Area WM 2008 Data

Station	Date	Collect	Tide	Temp	Sal	Strat	ADV	Stat	CL	MFCOL	WIND
WM001.00	02/27/08	DDO	E	2	26	R	P	O	A	5.5	N
WM001.00	04/23/08	DDO	F	13	20	R	-	O	A	<2.0	S
WM001.00	07/16/08	EXT	E	18	29	R	-	O	A	<2.0	CL
WM001.00	10/20/08	DDO	H	12	30	R	-	O	A	5.5	NW
WM001.00	11/04/08	DDO	H	11	24	R	-	O	A	2	SE
WM001.00	11/19/08	DDO	F	5	31	R	-	O	A	3.6	W
WM003.00	02/25/08	RL	F	2	28	R	-	O	A	<2.0	S
WM003.00	04/28/08	RL	F	8	6	R	P	O	A	9.1	SE
WM003.00	06/18/08	RL	F	15	16	R	N	O	A	<2.0	SE
WM003.00	08/11/08	RL	HF	17	4	R	P	O	A	125	SE
WM003.00	11/04/08	RL	HF	12	30	R	N	O	A	<2.0	SW
WM003.00	11/18/08	RL	F	11	8	R	P	O	A	122	N
WM004.00	01/02/08	RL	E	1	16	R	P	O	CA	35	NE
WM004.00	02/25/08	RL	F	2	22	R	-	C	CA	<2.0	SW
WM004.00	04/28/08	RL	F	8	4	R	P	O	CA	5.5	SE
WM004.00	05/14/08	RL	F	11	11	R	-	O	CA	<2.0	N
WM004.00	06/18/08	RL	F	16	13	R	N	O	CA	2	SE
WM004.00	08/11/08	RL	HF	18	2	R	P	O	CA	134	SE
WM004.00	11/04/08	RL	HF	11	20	R	N	O	CA	<2.0	SW
WM004.00	11/18/08	RL	F	10	5	R	P	O	CA	92	N
WM004.10	01/02/08	RL	E	1	16	R	P	O	CA	25	NE
WM004.10	02/25/08	RL	F	2	12	R	-	C	CA	9.1	SW
WM004.10	04/28/08	RL	F	8	6	R	P	O	CA	<2.0	SE
WM004.10	05/14/08	RL	F	10	11	R	-	O	CA	6	N
WM004.10	06/18/08	RL	F	16	13	R	N	O	CA	<2.0	SE
WM004.10	08/11/08	RL	H	18	2	R	P	O	CA	136	SE
WM004.10	11/04/08	RL	HF	12	14	R	N	O	CA	13	SW
WM004.10	11/18/08	RL	F	10	5	R	P	O	CA	116	N
WM004.50	01/02/08	RL	E	1	16	R	P	O	CA	25	NE
WM004.50	02/25/08	RL	HF	2	11	R	-	C	CA	<2.0	SW
WM004.50	04/28/08	RL	F	9	6	R	P	O	CA	2	SE
WM004.50	05/14/08	RL	F	10	11	R	-	O	CA	<2.0	N
WM004.50	06/18/08	RL	F	16	12	R	N	O	CA	<2.0	SE
WM004.50	08/11/08	RL	H	18	2	R	P	O	CA	130	SE
WM004.50	11/04/08	RL	HF	12	14	R	N	O	CA	6	SW
WM004.50	11/18/08	RL	F	10	6	R	P	O	CA	96	N
WM004.80	01/02/08	RL	E	1	23	R	P	O	CA	12	NE
WM004.80	02/25/08	RL	HF	2	11	R	-	C	CA	2	SW
WM004.80	04/28/08	RL	F	13	6	R	P	O	CA	2	SE
WM004.80	05/14/08	RL	F	10	12	R	-	O	CA	2	N
WM004.80	06/18/08	RL	F	16	14	R	N	O	CA	4	SE

Station	Date	Collect	Tide	Temp	Sal	Strat	ADV	Stat	CL	MFCOL	WIND
WM004.80	08/11/08	RL	H	19	3	R	P	O	CA	92	SE
WM004.80	11/04/08	RL	HF	13	14	R	N	O	CA	7.3	SW
WM004.80	11/18/08	RL	F	10	11	R	P	O	CA	28	N
WM005.00	02/25/08	RL	HF	2	21	R	-	O	A	10	SW
WM005.00	04/28/08	RL	F	9	4	R	P	O	A	5.5	SE
WM005.00	06/18/08	RL	F	17	12	R	N	O	A	<2.0	SE
WM005.00	08/11/08	RL	H	19	2	R	P	O	A	118	SE
WM005.00	11/04/08	RL	HF	12	24	R	N	O	A	2	SW
WM005.00	11/18/08	RL	F	10	6	R	P	O	A	122	N
WM006.00	01/02/08	RL	E	1	16	R	P	O	CA	22	NE
WM006.00	02/25/08	RL	HF	2	7	R	-	O	CA	7.3	S
WM006.00	04/28/08	RL	F	9	4	R	P	O	CA	4	SE
WM006.00	05/14/08	RL	F	11	8	R	-	O	CA	2	N
WM006.00	06/18/08	RL	F	16	12	R	N	O	CA	<2.0	SE
WM006.00	08/11/08	RL	H	18	1	R	P	O	CA	116	SE
WM006.00	11/04/08	RL	HF	12	10	R	N	C	CA	8	SW
WM006.00	11/18/08	RL	F	10	7	R	P	C	CA	120	N
WM006.50	01/02/08	RL	E	1	12	R	P	O	CA	14	NE
WM006.50	02/25/08	RL	HF	2	6	R	-	O	CA	8	SW
WM006.50	04/28/08	RL	F	10	2	R	P	O	CA	9.1	SE
WM006.50	05/14/08	RL	F	11	7	R	-	O	CA	2	N
WM006.50	06/18/08	RL	F	17	8	R	N	O	CA	<2.0	SE
WM006.50	08/11/08	RL	H	18	1	R	P	O	CA	112	SE
WM006.50	11/04/08	RL	HF	12	12	R	N	C	CA	7.3	SW
WM006.50	11/18/08	RL	F	10	2	R	P	C	CA	146	N
WM008.00	01/02/08	RL	E	2	16	R	P	O	CA	16	NE
WM008.00	02/25/08	RL	HF	2	8	R	-	O	CA	<2.0	S
WM008.00	04/28/08	RL	F	9	1	R	P	O	CA	8	SE
WM008.00	05/14/08	RL	F	11	6	R	-	O	CA	2	NE
WM008.00	06/18/08	RL	F	17	8	R	N	O	CA	2	SE
WM008.00	08/11/08	RL	H	19	0	R	P	O	CA	140	SE
WM008.00	11/04/08	RL	HF	12	12	R	N	C	CA	24	SW
WM008.00	11/18/08	RL	F	10	2	R	P	C	CA	80	N
WM009.00	02/25/08	RL	HF	2	8	R	-	C	P	25	S
WM009.00	04/28/08	RL	F	9	1	R	P	C	P	6	SE
WM009.00	06/18/08	RL	F	17	8	R	N	C	P	<2.0	SE
WM009.00	08/11/08	RL	H	19	0	R	P	C	P	142	SE
WM009.00	11/04/08	RL	HF	12	10	R	N	C	P	16	SW
WM009.00	11/18/08	RL	F	10	2	R	P	C	P	120	N
WM009.80	02/25/08	RL	HF	2	7	R	-	C	P	10	SW
WM009.80	04/28/08	RL	HF	11	3	R	P	C	P	3.6	SE
WM009.80	06/18/08	RL	F	16	12	R	N	C	P	2	SE
WM009.80	08/11/08	RL	H	19	2	R	P	C	P	116	SE

Station	Date	Collect	Tide	Temp	Sal	Strat	ADV	Stat	CL	MFCOL	WIND
WM009.80	11/04/08	RL	HF	12	10	R	N	C	P	8	SW
WM009.80	11/18/08	RL	F	9	4	R	P	C	P	98	N
WM012.00	01/02/08	RL	E	2	15	R	P	O	CA	10	NE
WM012.00	02/25/08	RL	HF	2	4	R	-	O	CA	13	S
WM012.00	04/28/08	RL	HF	10	0	R	P	O	CA	11	SE
WM012.00	05/14/08	RL	F	12	4	R	-	O	CA	<2.0	NE
WM012.00	06/18/08	RL	F	17	8	R	N	O	CA	3.6	SE
WM012.00	08/11/08	RL	H	18	0	R	P	O	CA	112	SE
WM012.00	11/04/08	RL	H	11	7	R	N	C	CA	10	SW
WM012.00	11/18/08	RL	F	9	4	R	P	C	CA	160	N
WM015.00	01/02/08	RL	E	1	12	R	P	O	CA	38	NW
WM015.00	02/25/08	RL	HF	2	10	R	-	O	CA	22	S
WM015.00	04/28/08	RL	HF	9	1	R	P	O	CA	10	SE
WM015.00	05/14/08	RL	HF	12	5	R	-	O	CA	<2.0	N
WM015.00	06/18/08	RL	HF	18	6	R	N	O	CA	4	SE
WM015.00	08/11/08	RL	H	18	0	R	P	O	CA	90	SE
WM015.00	11/04/08	RL	H	11	14	R	N	C	CA	15	SW
WM015.00	11/18/08	RL	HF	9	2	R	P	C	CA	120	N
WM016.00	01/02/08	RL	E	1	13	R	P	O	CA	11	NW
WM016.00	02/25/08	RL	H	1	6	R	-	O	CA	46	S
WM016.00	04/28/08	RL	HF	9	0	R	P	O	CA	6	SE
WM016.00	05/14/08	RL	HF	12	5	R	-	O	CA	3.6	N
WM016.00	06/18/08	RL	HF	18	6	R	N	O	CA	4	SE
WM016.00	08/11/08	RL	H	19	0	R	P	O	CA	116	SE
WM016.00	11/04/08	RL	H	11	10	R	N	C	CA	10	SW
WM016.00	11/18/08	RL	HF	9	1	R	P	C	CA	100	N
WM017.20	02/25/08	RL	H	1	4	R	-	C	P	14	S
WM017.20	04/28/08	RL	HF	9	0	R	P	C	P	8	SE
WM017.20	06/18/08	RL	HF	19	6	R	N	C	P	<2.0	SE
WM017.20	08/11/08	RL	HE	18	0	R	P	C	P	94	SE
WM017.20	11/04/08	RL	H	12	8	R	N	C	P	20	SW
WM017.20	11/18/08	RL	HF	10	2	R	P	C	P	140	N
WM017.50	02/25/08	RL	H	2	2	R	W	C	P	13	S
WM017.50	04/28/08	RL	HF	9	0	R	P	C	P	8	SE
WM017.50	06/18/08	RL	HF	19	3	R	N	C	P	5.5	SE
WM017.50	08/11/08	RL	HE	19	0	R	P	C	P	126	SE
WM017.50	11/04/08	RL	H	12	6	R	N	C	P	12	SW
WM017.50	11/18/08	RL	HF	9	1	R	P	C	P	160	N
WM018.20	02/25/08	RL	H	1	2	R	-	C	P	46	S
WM018.20	04/28/08	RL	HF	9	0	R	P	C	P	10	SE
WM018.20	06/18/08	RL	HF	19	1	R	N	C	P	11	SE
WM018.20	08/11/08	RL	HE	19	0	R	P	C	P	154	SE
WM018.20	11/04/08	RL	H	10	5	R	N	C	P	22	SW

Station	Date	Collect	Tide	Temp	Sal	Strat	ADV	Stat	CL	MFCOL	WIND
WM018.20	11/18/08	RL	HF	10	2	R	P	C	P	140	N
WM019.10	02/26/08	CCA	HF	3	12	R	-	C	P	18	CL
WM019.10	04/13/08	CCA	E	5	0	R	-	C	P	93	NW
WM019.10	06/15/08	JHZ	F	17	10	R	P	C	P	4	S
WM019.10	08/10/08	CCA	H	18	2	R	-	C	P	360	CL
WM019.10	10/13/08	CCA	F	11	25	R	-	C	P	<2.0	-
WM019.10	11/02/08	CCA	F	9	14	R	-	C	P	18	NW
WM019.20	01/02/08	RL	E	1	12	R	PW	C	P	8	NW
WM019.20	02/25/08	RL	HF	2	6	R	-	C	P	11	SW
WM019.20	04/28/08	RL	HF	9	1	R	P	C	P	<2.0	SE
WM019.20	05/14/08	RL	F	11	5	R	-	C	P	<2.0	NE
WM019.20	06/18/08	RL	F	18	6	R	N	C	P	2	SE
WM019.20	08/11/08	RL	H	19	0	R	P	C	P	108	SE
WM019.20	11/04/08	RL	HF	11	10	R	N	C	P	16	SW
WM019.20	11/18/08	RL	F	10	2	R	P	C	P	160	N
WM019.40	01/02/08	RL	E	1	11	R	P	C	P	24	NW
WM019.40	02/25/08	RL	HF	2	6	R	-	C	P	13	S
WM019.40	04/28/08	RL	HF	9	1	R	P	C	P	2	SE
WM019.40	05/14/08	RL	F	11	5	R	-	C	P	4	NE
WM019.40	06/18/08	RL	F	18	8	R	N	C	P	2	SE
WM019.40	08/11/08	RL	H	19	0	R	P	C	P	124	SE
WM019.40	11/04/08	RL	H	12	10	R	N	C	P	14	SW
WM019.40	11/18/08	RL	F	9	2	R	P	C	P	120	N
WM019.50	02/26/08	CCA	HF	3	8	R	-	C	P	36	CL
WM019.50	04/13/08	CCA	HE	5	0	R	-	C	P	100	NW
WM019.50	06/15/08	JHZ	F	16	8	R	P	C	P	11	S
WM019.50	08/10/08	CCA	H	17	2	R	-	C	P	260	CL
WM019.50	10/13/08	CCA	F	10	22	R	-	C	P	<2.0	-
WM019.50	11/02/08	CCA	F	9	14	R	-	C	P	18	NW
WM020.00	02/26/08	CCA	HF	1	18	R	-	O	A	2	CL
WM020.00	04/13/08	CCA	E	6	23	R	-	O	A	<2.0	NW
WM020.00	06/15/08	JHZ	HF	12	18	R	P	O	A	<2.0	S
WM020.00	08/10/08	CCA	HE	18	5	R	-	O	A	280	CL
WM020.00	10/13/08	CCA	F	10	30	R	-	O	A	<2.0	-
WM020.00	11/02/08	CCA	HF	8	30	R	-	O	A	<2.0	NW
WM022.00	02/26/08	CCA	HF	4	22	R	-	O	A	<2.0	CL
WM022.00	04/13/08	CCA	E	5	18	R	-	O	A	4	NW
WM022.00	06/15/08	JHZ	HF	12	24	R	P	O	A	10	S
WM022.00	08/10/08	CCA	HE	18	5	R	-	O	A	220	CL
WM022.00	10/13/08	CCA	F	10	32	R	-	O	A	<2.0	-
WM022.00	11/02/08	CCA	HF	9	29	R	-	O	A	2	NW
WM023.00	02/26/08	CCA	HF	4	22	R	-	O	A	<2.0	CL

Station	Date	Collect	Tide	Temp	Sal	Strat	ADV	Stat	CL	MFCOL	WIND
WM023.00	04/13/08	CCA	E	6	16	R	-	O	A	<2.0	NW
WM023.00	06/15/08	JHZ	HF	13	25	R	P	O	A	<2.0	S
WM023.00	08/10/08	CCA	HE	18	5	R	-	O	A	220	CL
WM023.00	10/13/08	CCA	F	10	31	R	-	O	A	<2.0	-
WM023.00	11/02/08	CCA	HF	9	24	R	-	O	A	7.3	NW
WM024.00	02/26/08	CCA	F	3	23	R	-	O	A	<2.0	CL
WM024.00	04/13/08	CCA	E	5	16	R	-	O	A	5.5	NW
WM024.00	06/15/08	JHZ	H	11	22	R	P	O	A	<2.0	S
WM024.00	08/10/08	CCA	HE	17	9	R	-	O	A	280	CL
WM024.00	10/13/08	CCA	HF	9	30	R	-	O	A	<2.0	-
WM024.00	11/02/08	CCA	H	8	24	R	-	O	A	2	NW
WM026.00	02/26/08	CCA	HF	2	10	R	-	O	CA	16	CL
WM026.00	03/17/08	FP	H	1	22	R	-	O	CA	4	CL
WM026.00	04/13/08	CCA	E	6	2	R	-	O	CA	40	NW
WM026.00	06/15/08	JHZ	F	15	8	R	P	O	CA	2	S
WM026.00	07/16/08	CCA	F	15	22	R	-	O	CA	2	S
WM026.00	08/10/08	CCA	HE	18	12	R	-	O	CA	96	CL
WM026.00	10/13/08	CCA	F	10	30	R	-	C	CA	<2.0	-
WM026.00	11/02/08	CCA	F	9	30	R	-	C	CA	2	NW
WM026.90	02/26/08	CCA	H	4	12	R	-	O	CA	8	CL
WM026.90	03/17/08	FP	H	1	8	R	-	O	CA	8	CL
WM026.90	04/13/08	CCA	E	5	18	R	-	O	CA	8	NW
WM026.90	06/15/08	JHZ	F	15	12	R	P	O	CA	<2.0	S
WM026.90	07/16/08	CCA	F	16	22	R	-	O	CA	<2.0	S
WM026.90	08/10/08	CCA	E	17	10	R	-	O	CA	152	CL
WM026.90	10/13/08	CCA	F	10	28	R	-	C	CA	<2.0	-
WM026.90	11/02/08	CCA	H	9	31	R	-	C	CA	<2.0	NW
WM027.00	02/26/08	CCA	H	4	14	R	-	C	P	8	CL
WM027.00	03/17/08	FP	HE	1	8	R	-	O	CA	12	N
WM027.00	04/13/08	CCA	E	5	18	R	-	O	CA	2	NW
WM027.00	06/15/08	JHZ	F	13	16	R	P	O	CA	<2.0	S
WM027.00	07/16/08	CCA	F	15	22	R	-	O	CA	<2.0	S
WM027.00	08/10/08	CCA	HE	18	9	R	-	O	CA	160	CL
WM027.00	10/13/08	CCA	F	11	27	R	-	C	CA	2	-
WM027.00	11/02/08	CCA	HF	9	30	R	-	C	CA	<2.0	NW
WM028.00	02/26/08	CCA	HF	4	15	R	-	O	A	4	CL
WM028.00	04/13/08	CCA	E	5	16	R	-	O	A	2	NW
WM028.00	06/15/08	JHZ	HF	12	18	R	P	O	A	5.5	S
WM028.00	08/10/08	CCA	HE	17	10	R	-	O	A	100	CL
WM028.00	10/13/08	CCA	F	10	30	R	-	O	A	<2.0	-
WM028.00	11/02/08	CCA	HF	9	24	R	-	O	A	4	NW
WM029.10	02/25/08	RL	HF	0	1	R	W	C	P	44	SE
WM029.10	04/28/08	RL	HF	10	0	R	P	C	P	4	SE

Station	Date	Collect	Tide	Temp	Sal	Strat	ADV	Stat	CL	MFCOL	WIND
WM029.10	06/18/08	RL	HF	20	2	R	N	C	P	4	SE
WM029.10	08/11/08	RL	H	18	0	R	P	C	P	156	SE
WM029.10	11/04/08	RL	HF	10	5	R	N	C	P	29	SW
WM029.10	11/18/08	RL	F	9	0	R	P	C	P	180	N

Appendix F. Kennebec River SRS and Adverse Data for River Discharge Assessment, 2002-2008

Q1= river discharge on day of sample collection
Q2= river discharge on day before sample collection
Q3= river discharge on two days before sample collection
Exceed 30K= indicated whether the river exceeded 30,000 cfs within a week prior to sample collection
Sum Rain= cumulative rainfall amount 4 days prior to sample collection
Rainfall Closure= Atkins Bay rainfall closure status (exceeded 1.5 inches in 24 hours)

Stations WM 4 through WM 8

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	Rainfall Closure	WM4.00	WM4.10	WM4.50	WM4.80	WM5.00	WM6.00	WM6.50	WM8.00
06-Jan-02	R	3310	3310	4020		0									
22-Jan-02	R	3780	3820	3740		0.56		2.9		2.9	2.9	2.9	2.9		2.9
03-Feb-02	R	4300	4010	4460		0.98									
11-Feb-02	R	4970	3870	4180		0.99		3.6		2.9	9.1	2.9	2.9		2.9
04-Mar-02	R	17590	12910	11880		0.84		23		23	9.1	23	9.1		15
17-Mar-02	R	14360	15690	17450		0.26									
01-Apr-02	R	21040	15670	12000		0.91		15		3.6	3.6	**93**	3.6		21
21-Apr-02	R	42400	52900	63900	Yes	0.01									
08-May-02	R	18850	19750	21410		0		3.6	3	3	3.6	2.9	2.9		15
12-May-02	R	14120	15530	15750		0.63									
21-May-02	A	22400	25100	28100	Yes	0.73	Yes	43	23	23	9.1				
23-May-02	A	17160	19400	22400	Yes	0.06	Yes	9.1	9.1	3.6	23				
05-Jun-02	R	14200	14270	14860		0.06									
16-Jun-02	R	23960	28630	40100	Yes	1.01									
17-Jun-02	R	25100	23960	28630	Yes	0.99									
19-Jun-02	R	19440	22050	25100	Yes	0.09									
20-Jun-02	R	16660	19440	22050	Yes	0		43	23	43	43	23	**240**		**93**
21-Jul-02	R	6640	7260	7720		0.34									

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	Rainfall Closure	WM4.00	WM4.10	WM4.50	WM4.80	WM5.00	WM6.00	WM6.50	WM8.00
24-Jul-02	R	7480	8380	8590		0.83									
29-Jul-02	R	7680	6610	6440		0.46		9.1	2.9	2.9	2.9	2.9	3.6		2.9
30-Jul-02	R	8020	7680	6610		0.47									
31-Jul-02	R	7520	8020	7680		0.47									
11-Aug-02	R	4270	5490	6460		0									
12-Aug-02	R	5220	4270	5490		0									
21-Aug-02	R	4010	3940	4270		0		3.6	3.6	2.9	2.9	2.9	9.1		2.9
11-Sep-02	R	5070	4400	4140		0.05									
22-Sep-02	R	4890	5200	5350		0									
26-Sep-02	R	4800	5000	4830		1.64		2.9	7.3	2.9	2.9	2.9	9.1		2.9
16-Oct-02	R	5500	5030	5890		2.1		2.9	2.9	2.9	3.6	3.6	2.9		2.9
20-Oct-02	R	7090	7400	8100		0.66									
28-Oct-02	R	5390	4890	4710		1.2									
31-Oct-02	A	5970	6190	5530		0	Yes	2.9	2.9	3.6	2.9				
17-Nov-02	R	7540	8370	7760		1.37									
18-Nov-02	R	8200	7540	8370		1.7		2.9	9.1	23	9.1	**93**	9.1		3.6
04-Dec-02	R	6010	6390	7220		0.03									
15-Dec-02	R	6620	4700	4400		2.27									
16-Dec-02	R	8390	6620	4700		1.85	Yes	2.9	9.1	3.6	43	2.9	7.3		2.9
18-Dec-02	R	7050	8130	8390		0.1									
19-Dec-02	R	6220	7050	8130		0									
29-Dec-02	A	6410	5870	6650		0.91	Yes	9.1	43	3.6	3.6				
13-Jan-03	R	4990	4830	4910		0.09		3.6	3.6	7.3	3.6	2.9	15		9.1
11-Feb-03	R	4840	4920	4920		0.04		2.9	3.6	3.6	2.9	2.9	2.9		2.9
12-Feb-03	R	4960	4840	4920		0.16									
23-Feb-03	R	4940	4690	4720		1.28									
17-Mar-03	R	5320	4930	4820		0		3.6	2.9	3.6	2.9	3.6	2.9		2.9
19-Mar-03	R	6420	5980	5320		0									
23-Mar-03	R	15580	11070	8780		1.15									
31-Mar-03	R	59600	50000	37500	Yes	1.24									
07-Apr-03	R	17980	19640	23210	Yes	0.38		9.1	9.1	9.1	2.9	2.9	3.6		43

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	Rainfall Closure	WM4.00	WM4.10	WM4.50	WM4.80	WM5.00	WM6.00	WM6.50	WM8.00
16-Apr-03	R	29100	23010	23140		0									
27-Apr-03	R	23400	22300	23930		1.66									
30-Apr-03	R	22000	23500	23800		0.61									
05-May-03	R	25900	34400	28800	Yes	0.11		2.9	3.6	2.9	2.9	2.9	3.6		3.6
07-May-03	R	19590	20630	25900	Yes	0.23									
18-May-03	R	12490	11750	14700		0									
21-May-03	R	9960	11540	11200		0.4									
22-May-03	R	9650	9960	11540		0.4									
04-Jun-03	R	10170	11360	12800		0.72									
08-Jun-03	R	17020	16530	13620		0.48									
09-Jun-03	R	13670	17020	16530		0.38		2.9	2.9	3.6	3.6	2.9	9.1		3.6
18-Jun-03	R	16770	21170	23870		0.24									
06-Jul-03	R	6650	6660	6800		0.26									
14-Jul-03	R	6060	6060	5520		0.46		2.9	3.6	3.6	2.9	3.6	43		9.1
16-Jul-03	R	5690	6200	6060		0.41									
21-Jul-03	R	5600	5120	4910		0									
31-Jul-03	R	5560	5400	5670		0.1									
04-Aug-03	R	6030	5420	5450		0.73		2.9	2.9	2.9	2.9	3.6	2.9		9.1
05-Aug-03	R	5960	6030	5420		0.23									
13-Aug-03	R	11560	16640	14600		2.18									
17-Aug-03	R	8340	8130	8890		0.2									
27-Aug-03	R	5580	5650	5800		0.01									
08-Sep-03	R	6450	6210	6480		0									
10-Sep-03	R	5570	5780	6450		0									
15-Sep-03	R	5430	4960	4850		0		3.6	3.6	2.9	9.1	2.9	23		3.6
25-Sep-03	R	12520	10140	7660		0.2									
28-Sep-03	R	8570	9560	10470		1.38									
08-Oct-03	R	11060	13030	13090		0									
14-Oct-03	R	12380	13330	7970		0.7		2.9	2.9	2.9	2.9	2.9	2.9		3.6
22-Oct-03	R	42100	19090	14430	Yes	0.26									
26-Oct-03	R	19370	20300	25110	Yes	0.23									

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	Rainfall Closure	WM4.00	WM4.10	WM4.50	WM4.80	WM5.00	WM6.00	WM6.50	WM8.00
03-Nov-03	R	30800	35800	48700	Yes	0.4	Yes	43	**460**	**93**	23	43	**93**		**93**
05-Nov-03	R	26300	27900	30800	Yes	0.99									
11-Nov-03	A	16300	17150	18970		0.09	Yes	9.1	43	3.6	21				
18-Nov-03	A	20180	19620	20980		0	Yes	23	**93**	**93**	23				
19-Nov-03	R	15770	20180	19620		0									
23-Nov-03	A	35500	46300	60100	Yes	1.29	Yes	**93**	**460**	**240**	**93**				
07-Dec-03	R	15900	17020	17450	Yes	1.14									
08-Dec-03	R	14690	15900	17020	Yes	1.14	Yes	43	**240**	43	23	23	**93**		43
10-Dec-03	R	15510	13790	14690		0.57									
11-Jan-04	A	20240	18720	17640		0	Yes	3.6	3.6	2.9	3.6				
09-Feb-04	R	13080	12620	12770		0.72									
17-Feb-04	R	12580	12820	12720		0		3.6	3.6	2.9	2.9	2.9	3.6		3.6
22-Feb-04	R	12070	12220	12200		1.12									
25-Feb-04	R	12250	12440	12460		0.56									
21-Mar-04	R	9880	10490	11200		0.7									
22-Mar-04	R	10260	9880	10490		0.7		3.6	3.6	2.9	2.9	2.9	2.9		2.9
24-Mar-04	R	9680	10110	10260		0.35									
21-Apr-04	R	33100	32900	34000	Yes	0									
26-Apr-04	R	19090	21400	24200	Yes	0.69		2.9	2.9	2.9	23	3.6	2.9		3.6
02-May-04	R	11200	14370	16000		0									
19-May-04	R	10630	9680	9770		0.7		2.9	2.9	3.6	2.9	3.6	3.6		3.6
02-Jun-04	R	11290	12480	14400		0.18		3.6	9.1	3.6	2.9	3.6	2.9		3.6
13-Jun-04	R	5490	5650	6530		0.02									
14-Jun-04	R	5770	5490	5650		0.03									
23-Jun-04	R	5290	5280	5220		0.13									
18-Jul-04	R	7280	5710	6370		0.07									
21-Jul-04	R	7760	7230	8260		0.15									
25-Jul-04	R	13750	9560	7590		0.47		2.9	2.9	9.1	2.9	2.9	2.9		2.9
28-Jul-04	R	8150	8790	9650		0.3									
22-Aug-04	R	12790	13110	12990		1.61									
25-Aug-04	R	11430	12490	13630		0		3.6	3.6	2.9	3.6	2.9	3.6		9.1

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	Rainfall Closure	WM4.00	WM4.10	WM4.50	WM4.80	WM5.00	WM6.00	WM6.50	WM8.00
30-Aug-04	R	10390	8250	8590		0									
21-Sep-04	R	11620	12240	10020		1.94		3.6	2.9	2.9	2.9	2.9	3.6		2.9
26-Sep-04	R	9050	9360	10680		0									
29-Sep-04	R	9680	9290	9370		0.12									
30-Sep-04	R	9980	9680	9290		0.12									
05-Oct-04	R	8680	8700	7350		0.17		3.6	2.9	9.1	3.6	23	23		23
13-Oct-04	R	7660	7100	7370		0.2									
19-Oct-04	R	10930	14600	15590		1.4									
24-Oct-04	R	9850	9730	8140		0									
14-Nov-04	R	8060	7900	8150		0.11									
15-Nov-04	R	6830	8060	7900		0.11		3.6	23	9.1	43	2.9	**93**		15
17-Nov-04	R	6550	7540	6830		0									
13-Dec-04	R	13710	14270	14730		0.56		43	23	23	43	43	**93**		23
01-Feb-05	R	10120	9720	10690		0									
22-Feb-05	R	12310	12650	13760		0.38		43	23	23	3.6	3.6	15		15
22-Mar-05	R	14320	12730	11600		0									
20-Apr-05	A	33700	34700	29200	Yes	0.23	Yes	9.1	2.9	9.1	2.9				
27-Apr-05	R	89600	105800	95800	Yes	3.16		**93**	**93**	**240**	**93**	**93**	**93**		**93**
10-May-05	R	33100	36600	38500	Yes	1.51		43	43	9.1	23	23	43		9.1
11-May-05	R	30660	33100	36600	Yes	0.46									
22-May-05	R	18230	18550	18790		0.92									
15-Jun-05	R	32300	17080	16480	Yes	2.18		9.1	43	3.6	75	3.6	2.9		15
26-Jun-05	R	14440	15820	19460	Yes	0									
05-Jul-05	R	10330	10900	11160		0.03									
20-Jul-05	R	7960	8170	9300		0.02									
21-Jul-05	R	7810	7960	8170		0.02									
27-Jul-05	R	6880	6780	7640		0.95		3.6	2.9	3.6	3.6	2.9	3.6		3.6
28-Jul-05	R	7750	6880	6780		0.95									
21-Aug-05	R	5030	4400	4850		0.02									
22-Aug-05	R	6140	5030	4400		0.02									
23-Aug-05	R	5900	6140	5030		0.12		2.9	9.1	3.6	3.6	2.9	3.6		2.9

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	Rainfall Closure	WM4.00	WM4.10	WM4.50	WM4.80	WM5.00	WM6.00	WM6.50	WM8.00
07-Sep-05	R	4630	6220	9020		0.05									
08-Sep-05	R	5380	4630	6220		0		3.6	2.9	3.6	2.9	9.1	3.6		2.9
18-Sep-05	R	6750	6940	6710		1.76									
20-Sep-05	R	7200	7620	6750		1.54									
21-Sep-05	R	6850	7200	7620		0.33									
27-Sep-05	R	7840	7950	7470		0.47									
06-Nov-05	R	28100	30960	34800	Yes	0.04									
07-Nov-05	R	29000	28100	30960	Yes	0.31		23	43	9.1	43	23	23	43	43
21-Nov-05	R	38700	45200	52800	Yes	0									
12-Dec-05	A	17450	17890	19530	Yes	0.91	Yes	21	23	23	8.2				
19-Dec-05	A	13710	12420	12380		0.83	Yes	2.9	15	43	2.9				
10-Jan-06	A	13220	13880	14410		0.02	Yes	15	**75**	15	9.1				
30-Jan-06	A	20200	20100	20740	Yes	0.37	Yes	9.1	9.1	9.1	21				
05-Feb-06	A	40200	26420	20790	Yes	2.66	Yes	7.3	9.1	43	13				
08-Feb-06	A	34000	45300	57300	Yes	1.3	Yes	**93**	**93**	**43**	**93**				
21-Feb-06	A	17480	17880	18210		0	Yes	2.9	2.9	2.9	2.9				
20-Mar-06	R	14730	16490	17820	Yes	0						2.9	9.1		
22-Mar-06	R	12030	13160	14730		0									
27-Mar-06	R	13630	11330	11070		0									
28-Mar-06	R	14040	13630	11330		0		2.9	2.9	2.9	2.9			2.9	2.9
23-Apr-06	R	14000	14570	16600		0	Yes	2.9	3.6	3.6	2.9				
08-May-06	R	10170	12780	14730		0.02									
21-May-06	R	44400	42500	35600	Yes	0.83									
19-Jun-06	R	19290	23270	28300	Yes	0									
25-Jun-06	R	17380	17410	18580		0.76									
26-Jun-06	R	16960	17380	17410		0.95		9.1	2.9	3.6	3.6	3.6	7.3		3.6
27-Jun-06	R	20360	16960	17380		0.65									
17-Jul-06	R	10720	10400	9750		0		3	3.6	2.9	3.6	3.6	3.6		15
14-Aug-06	R	8400	9160	8940		0.11									
23-Aug-06	R	12650	13220	11410		1.01		1.9	2	1.9	2	1.9	2	1.9	4
06-Sep-06	R	8310	9770	8630		1.17									

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	Rainfall Closure	WM4.00	WM4.10	WM4.50	WM4.80	WM5.00	WM6.00	WM6.50	WM8.00
11-Sep-06	A	9460	9370	9780		0.43									
13-Sep-06	R	9870	9460	9460		0		1.9	2	1.9	1.9	2			
25-Sep-06	R	9710	10320	9520		0.49									
26-Sep-06	R	7390	9710	10320		0.49								2	
27-Sep-06	R	7360	7390	9710		0.22									
15-Oct-06	R	19080	22280	32000	Yes	1.85									
18-Oct-06	R	11730	12490	14420	Yes	0.67	Yes	25	25	**800**	24	1.9	22	**33**	20
07-Nov-06	R	19960	21720	24720	Yes	0									
19-Nov-06	R	59800	84500	53900	Yes	0.98									
06-Dec-06	R	20940	24100	29200	Yes	0.16	Yes	22	**36**	**50**	**38**	24	**56**	18	29
10-Dec-06	R	15340	16820	18180	Yes	0.2									
12-Dec-06	A	14150	15670	15340		0	Yes	10	3.6	18	8	6			
18-Dec-06	R	13660	14880	16680		0.01								6	
17-Jan-07	R	14570	15490	16220		0.46		1.9					13		
13-Feb-07	R	12610	12450	10630		0									
21-Feb-07	R	11260	11400	12210		0					1.9	16	12		
13-Mar-07	R	12960	11990	10660		0.3		2	4	2	1.9	2	12	8	9.1
18-Mar-07	R	21310	21860	19500		3.36									
07-May-07	R	37800	41700	43900	Yes	0	Yes	**48**	**86**	**62**	22	**44**	13	4	31
09-May-07	A	33800	33500	37800	Yes	0	Yes	2	2	1.9	1.9				
16-May-07	A	28600	28860	29800	Yes	0.92									
03-Jun-07	R	12840	11670	11510		0.19									
04-Jun-07	R	14850	12840	11670		1.11									
06-Jun-07	R	38100	27300	14850	Yes	1.22			**38**	**44**				**42**	**50**
25-Jun-07	R	6970	7430	7620		0.03									
26-Jun-07	R	7540	6970	7430		0		8	1.9	6	8	2	1.9	1.9	2
11-Jul-07	R	6450	5430	5550		0.81									
23-Jul-07	R	7480	7380	6590		0.77									
29-Jul-07	R	4680	4430	5700		0.04									
21-Aug-07	R	4670	5030	5220		0.07		1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
04-Sep-07	R	4890	4880	4740		0		2	1.9	2	1.9				

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	Rainfall Closure	WM4.00	WM4.10	WM4.50	WM4.80	WM5.00	WM6.00	WM6.50	WM8.00
16-Sep-07	R	7260	7140	7160		0.26									
17-Sep-07	R	7520	7260	7140		0.26									
24-Oct-07	R	8530	9960	12130		0.03	Yes	1.9	4	11	4	6	6	10	2
13-Nov-07	R	14190	13970	15540	Yes	0.19		**46**	**52**	27	20	28	**48**	**36**	**50**
25-Nov-07	R	22370	26400	25210	Yes	0.1									
09-Dec-07	R	14860	14820	15820		0.15									
11-Dec-07	R	12090	14570	14860		0.34		6	10	2	8				
02-Jan-08	R	14520	14540	15520		0.95		35	25	25	12		22	14	16
25-Feb-08	R	17940	18990	19480		0.34	Yes	1.9	9.1	1.9	2	10	7.3	8	1.9
26-Feb-08	R	17490	17940	18990		0.34									
17-Mar-08	R	25080	26600	27500	Yes	0									
19-Mar-08	A	23580	24310	25080	Yes	0.47	Yes	7.3	22	16	20				
13-Apr-08	R	63100	57700	53800	Yes	0.4									
23-Apr-08	R	71500	74100	76700	Yes	0									
28-Apr-08	R	37700	42700	54600	Yes	1.06		5.5	1.9	2	2	5.5	4	9.1	8
11-May-08	A	29900	32570	35100	Yes	0.03	Yes	2	4	1.9	1.9		2	1.9	7.3
14-May-08	R	21100	23890	25740	Yes	0		1.9	6	1.9	2		2	2	2
15-Jun-08	R	18190	19680	21250		0.23									
18-Jun-08	R	30400	20400	18720	Yes	0.51		2	1.9	1.9	4	1.9	1.9	1.9	2
16-Jul-08	R	11080	10700	9260		0									
10-Aug-08	R	68900	83400	77700	Yes	2.16									
11-Aug-08	R	52700	68900	83400	Yes	2.11	Yes	**134**	**136**	**130**	**92**	**118**	**116**	**112**	**140**
13-Oct-08	R	10350	9940	10410		0									
20-Oct-08	R	11110	10300	9990		0									
02-Nov-08	R	18470	21230	24000	Yes	0									
04-Nov-08	R	15630	16930	18470	Yes	0		1.9	13	6	7.3	2	8	7.3	24
18-Nov-08	R	33500	43800	39300	Yes	1.36	Yes	**92**	**116**	**96**	28	122	**120**	**146**	**80**

.

Stations WM 9 through 19.4

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM9.00	WM9.80	WM12.0	WM15.0	WM16.0	WM017.2	WM018.2	WM019.1	WM019.40
06-Jan-02	R	3310	3310	4020		0									
22-Jan-02	R	3780	3820	3740		0.56	2.9	2.9	9.1						
03-Feb-02	R	4300	4010	4460		0.98									
11-Feb-02	R	4970	3870	4180		0.99	2.9	23	3.6						
04-Mar-02	R	17590	12910	11880		0.84	9.1	9.1	93						
17-Mar-02	R	14360	15690	17450		0.26									
01-Apr-02	R	21040	15670	12000		0.91	23	2.9	23						
21-Apr-02	R	42400	52900	63900	Yes	0.01								1100	
08-May-02	R	18850	19750	21410		0	3.6	9.1	2.9	2.9	2.9	3.6	3.6		
12-May-02	R	14120	15530	15750		0.63								2.9	
21-May-02	A	22400	25100	28100	Yes	0.73									
23-May-02	A	17160	19400	22400	Yes	0.06									
05-Jun-02	R	14200	14270	14860		0.06									
16-Jun-02	R	23960	28630	40100	Yes	1.01								460	
17-Jun-02	R	25100	23960	28630	Yes	0.99				93					43
19-Jun-02	R	19440	22050	25100	Yes	0.09									
20-Jun-02	R	16660	19440	22050	Yes	0	**93**	**240**	93		93	93	240		
21-Jul-02	R	6640	7260	7720		0.34								9.1	
24-Jul-02	R	7480	8380	8590		0.83				3.6					15
29-Jul-02	R	7680	6610	6440		0.46	3.6	2.9							
30-Jul-02	R	8020	7680	6610		0.47									
31-Jul-02	R	7520	8020	7680		0.47				3.6					3.6
11-Aug-02	R	4270	5490	6460		0								2.9	
12-Aug-02	R	5220	4270	5490		0				9.1					3.6
21-Aug-02	R	4010	3940	4270		0	9.1	3.6	2.9	3.6	9.1	9.1	23		23
11-Sep-02	R	5070	4400	4140		0.05				9.1					2.9
22-Sep-02	R	4890	5200	5350		0								15	
26-Sep-02	R	4800	5000	4830		1.64	2.9	9.1	3.6		2.9	3	23		
16-Oct-02	R	5500	5030	5890		2.1	3.6	3.6	3.6	2.9	2.9	2.9	9.1		2.9

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM9.00	WM9.80	WM12.0	WM15.0	WM16.0	WM017.2	WM018.2	WM019.1	WM019.40
20-Oct-02	R	7090	7400	8100		0.66									
28-Oct-02	R	5390	4890	4710		1.2				2.9					2.9
31-Oct-02	A	5970	6190	5530		0									
17-Nov-02	R	7540	8370	7760		1.37								23	
18-Nov-02	R	8200	7540	8370		1.7	9.1	23	43		3.6	15	43		
04-Dec-02	R	6010	6390	7220		0.03									3.6
15-Dec-02	R	6620	4700	4400		2.27									
16-Dec-02	R	8390	6620	4700		1.85	23	43	9.1		3.6	7.3	7.3		
18-Dec-02	R	7050	8130	8390		0.1				2.9					23
19-Dec-02	R	6220	7050	8130		0									
29-Dec-02	A	6410	5870	6650		0.91									
13-Jan-03	R	4990	4830	4910		0.09	9.1	43	15		23	15	23		
11-Feb-03	R	4840	4920	4920		0.04	2.9	2.9	9.1		2.9	2.9	9.1		
12-Feb-03	R	4960	4840	4920		0.16				2.9					2.9
23-Feb-03	R	4940	4690	4720		1.28								2.9	
17-Mar-03	R	5320	4930	4820		0	3.6	3.6	2.9		2.9	9.1	14.4		
19-Mar-03	R	6420	5980	5320		0				3.6					23
23-Mar-03	R	15580	11070	8780		1.15								2.9	
31-Mar-03	R	59600	50000	37500	Yes	1.24									
07-Apr-03	R	17980	19640	23210	Yes	0.38	15	23	43		23	9.1	31		
16-Apr-03	R	29100	23010	23140		0				9.1					43
27-Apr-03	R	23400	22300	23930		1.66								3.6	
30-Apr-03	R	22000	23500	23800		0.61				3.6					3.6
05-May-03	R	25900	34400	28800	Yes	0.11	2.9	2.9	2.9		3.6	9.1	3.6		
07-May-03	R	19590	20630	25900	Yes	0.23				23					9.1
18-May-03	R	12490	11750	14700		0								3.6	
21-May-03	R	9960	11540	11200		0.4				2.9					3.6
22-May-03	R	9650	9960	11540		0.4									
04-Jun-03	R	10170	11360	12800		0.72				2.9					3.6
08-Jun-03	R	17020	16530	13620		0.48								2.9	
09-Jun-03	R	13670	17020	16530		0.38	3.6	23	3.6		3.6	9.1	3.6		

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM9.00	WM9.80	WM12.0	WM15.0	WM16.0	WM017.2	WM018.2	WM019.1	WM019.40
18-Jun-03	R	16770	21170	23870		0.24									93
06-Jul-03	R	6650	6660	6800		0.26								3.6	
14-Jul-03	R	6060	6060	5520		0.46	9.1	23	43		3.6	15	5.7		
16-Jul-03	R	5690	6200	6060		0.41				7.3					43
21-Jul-03	R	5600	5120	4910		0									
31-Jul-03	R	5560	5400	5670		0.1				2.9					3
04-Aug-03	R	6030	5420	5450		0.73	3.6	2.9	93		2.9	3.6	3.6		
05-Aug-03	R	5960	6030	5420		0.23									
13-Aug-03	R	11560	16640	14600		2.18				15					3.6
17-Aug-03	R	8340	8130	8890		0.2								9.1	
27-Aug-03	R	5580	5650	5800		0.01				7.3					9.1
08-Sep-03	R	6450	6210	6480		0									
10-Sep-03	R	5570	5780	6450		0				43					9.1
15-Sep-03	R	5430	4960	4850		0	3.6	2.9	3.6		3.6	3.6	5.7		
25-Sep-03	R	12520	10140	7660		0.2				23					9.1
28-Sep-03	R	8570	9560	10470		1.38								3.6	
08-Oct-03	R	11060	13030	13090		0				2.9					3.6
14-Oct-03	R	12380	13330	7970		0.7	2.9	3.6	3.6		3.6	3.6	9.1		
22-Oct-03	R	42100	19090	14430	Yes	0.26				3.6					3.6
26-Oct-03	R	19370	20300	25110	Yes	0.23								15	
03-Nov-03	R	30800	35800	48700	Yes	0.4	**240**	43	**93**		**93**	**240**	**63**		
05-Nov-03	R	26300	27900	30800	Yes	0.99				43					**240**
11-Nov-03	A	16300	17150	18970		0.09									
18-Nov-03	A	20180	19620	20980		0									
19-Nov-03	R	15770	20180	19620		0				43					**75**
23-Nov-03	A	35500	46300	60100	Yes	1.29									
07-Dec-03	R	15900	17020	17450	Yes	1.14									
08-Dec-03	R	14690	15900	17020	Yes	1.14	**93**	43	**93**		43	43	**240**		
10-Dec-03	R	15510	13790	14690		0.57				2.9					2.9
11-Jan-04	A	20240	18720	17640		0									
09-Feb-04	R	13080	12620	12770		0.72									

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM9.00	WM9.80	WM12.0	WM15.0	WM16.0	WM017.2	WM018.2	WM019.1	WM019.40
17-Feb-04	R	12580	12820	12720		0	2.9	3.6	2.9		3.6	9.1	5.7		
22-Feb-04	R	12070	12220	12200		1.12								3.6	
25-Feb-04	R	12250	12440	12460		0.56				2.9					3.6
21-Mar-04	R	9880	10490	11200		0.7								3.6	
22-Mar-04	R	10260	9880	10490		0.7	2.9	3.6	9.1		3.6	9.1	3.6		
24-Mar-04	R	9680	10110	10260		0.35				2.9					3.6
21-Apr-04	R	33100	32900	34000	Yes	0				3.6					15
26-Apr-04	R	19090	21400	24200	Yes	0.69	2.9	3.6	2.9		2.9	3.6	2.9		
02-May-04	R	11200	14370	16000		0								3	
19-May-04	R	10630	9680	9770		0.7	2.9	2.9	3.6	2.9	2.9	9.1	3.6		3.6
02-Jun-04	R	11290	12480	14400		0.18	3.6	3.6	9.1	15	3.6	3.6	9.1		3
13-Jun-04	R	5490	5650	6530		0.02								3.6	
14-Jun-04	R	5770	5490	5650		0.03									
23-Jun-04	R	5290	5280	5220		0.13			9.1	43	9.1				9.1
18-Jul-04	R	7280	5710	6370		0.07								23	
21-Jul-04	R	7760	7230	8260		0.15				9.1					9.1
25-Jul-04	R	13750	9560	7590		0.47	9.1	23	3.6		2.9	2.9	14		
28-Jul-04	R	8150	8790	9650		0.3									
22-Aug-04	R	12790	13110	12990		1.61								15	
25-Aug-04	R	11430	12490	13630		0	9.1	23	3.6	2.9	9.1	3.6	8.2		9.1
30-Aug-04	R	10390	8250	8590		0									
21-Sep-04	R	11620	12240	10020		1.94	9.1	2.9	9.1		3.6	9.1	3.2		
26-Sep-04	R	9050	9360	10680		0								9.1	
29-Sep-04	R	9680	9290	9370		0.12				23					23
30-Sep-04	R	9980	9680	9290		0.12									
05-Oct-04	R	8680	8700	7350		0.17	23	23	43		23	23	43		
13-Oct-04	R	7660	7100	7370		0.2				15					9.1
19-Oct-04	R	10930	14600	15590		1.4									
24-Oct-04	R	9850	9730	8140		0									
14-Nov-04	R	8060	7900	8150		0.11								3.6	
15-Nov-04	R	6830	8060	7900		0.11	43	43	43		23	**93**	**93**		

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM9.00	WM9.80	WM12.0	WM15.0	WM16.0	WM017.2	WM018.2	WM019.1	WM019.40
17-Nov-04	R	6550	7540	6830		0				**93**					**93**
13-Dec-04	R	13710	14270	14730		0.56	43	**93**	**93**		**240**	23	**93**		
01-Feb-05	R	10120	9720	10690		0								93	
22-Feb-05	R	12310	12650	13760		0.38	43	15	93		43	**93**	**149**		
22-Mar-05	R	14320	12730	11600		0									
20-Apr-05	A	33700	34700	29200	Yes	0.23									
27-Apr-05	R	89600	105800	95800	Yes	3.16	43	43	93	240	43	23	**149**	**240**	
10-May-05	R	33100	36600	38500	Yes	1.51	**93**	15	15		43	23	31		
11-May-05	R	30660	33100	36600	Yes	0.46				43					**240**
22-May-05	R	18230	18550	18790		0.92								15	
15-Jun-05	R	32300	17080	16480	Yes	2.18	23	23	3.6	43	3.6	3.6	2.9		3.6
26-Jun-05	R	14440	15820	19460	Yes	0								3.6	
05-Jul-05	R	10330	10900	11160		0.03			3.6	2.9	2.9				
20-Jul-05	R	7960	8170	9300		0.02									43
21-Jul-05	R	7810	7960	8170		0.02								7.3	
27-Jul-05	R	6880	6780	7640		0.95	9.1	9.1	3.6		9.1	21	15		
28-Jul-05	R	7750	6880	6780		0.95				3.6					
21-Aug-05	R	5030	4400	4850		0.02								9.1	
22-Aug-05	R	6140	5030	4400		0.02									
23-Aug-05	R	5900	6140	5030		0.12	2.9	9.1	3.6	2.9	9.1	23	5.7		9.1
07-Sep-05	R	4630	6220	9020		0.05				2.9					9.1
08-Sep-05	R	5380	4630	6220		0	9.1	3.6	2.9		2.9	9.1	2.9		
18-Sep-05	R	6750	6940	6710		1.76								23	
20-Sep-05	R	7200	7620	6750		1.54				3.6					
21-Sep-05	R	6850	7200	7620		0.33			3		23				
27-Sep-05	R	7840	7950	7470		0.47									
06-Nov-05	R	28100	30960	34800	Yes	0.04								23	
07-Nov-05	R	29000	28100	30960	Yes	0.31	23	43	93		23	43	23		
21-Nov-05	R	38700	45200	52800	Yes	0									
12-Dec-05	A	17450	17890	19530	Yes	0.91									
19-Dec-05	A	13710	12420	12380		0.83									

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM9.00	WM9.80	WM12.0	WM15.0	WM16.0	WM017.2	WM018.2	WM019.1	WM019.40
10-Jan-06	A	13220	13880	14410		0.02									
30-Jan-06	A	20200	20100	20740	Yes	0.37									
05-Feb-06	A	40200	26420	20790	Yes	2.66									
08-Feb-06	A	34000	45300	57300	Yes	1.3									
21-Feb-06	A	17480	17880	18210		0									
20-Mar-06	R	14730	16490	17820	Yes	0	3.6			3.6	3.6		3.6		3.6
22-Mar-06	R	12030	13160	14730		0								2.9	
27-Mar-06	R	13630	11330	11070		0									
28-Mar-06	R	14040	13630	11330		0		3.6	2.9			2.9			
23-Apr-06	R	14000	14570	16600		0									
08-May-06	R	10170	12780	14730		0.02									
21-May-06	R	44400	42500	35600	Yes	0.83								15	
19-Jun-06	R	19290	23270	28300	Yes	0									
25-Jun-06	R	17380	17410	18580		0.76								15	
26-Jun-06	R	16960	17380	17410		0.95	3.6	43	2.9	3	9.1	6.2	7.3		3.6
27-Jun-06	R	20360	16960	17380		0.65								2	
17-Jul-06	R	10720	10400	9750		0	9.1	23	23	3.6	3.6	2.9	5.7		3.6
14-Aug-06	R	8400	9160	8940		0.11									
23-Aug-06	R	12650	13220	11410		1.01	1.9	4	4	1.9	20	4	20		1.9
06-Sep-06	R	8310	9770	8630		1.17									
11-Sep-06	A	9460	9370	9780		0.43									
13-Sep-06	R	9870	9460	9460		0									
25-Sep-06	R	9710	10320	9520		0.49									
26-Sep-06	R	7390	9710	10320		0.49			2		2				
27-Sep-06	R	7360	7390	9710		0.22				2					1.9
15-Oct-06	R	19080	22280	32000	Yes	1.85								12	
18-Oct-06	R	11730	12490	14420	Yes	0.67	11	28	20	16	7.3	31	22		22
07-Nov-06	R	19960	21720	24720	Yes	0									
19-Nov-06	R	59800	84500	53900	Yes	0.98									
06-Dec-06	R	20940	24100	29200	Yes	0.16	31	**38**	**64**		**48**	**54**	**74**		
10-Dec-06	R	15340	16820	18180	Yes	0.2								2	

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM9.00	WM9.80	WM12.0	WM15.0	WM16.0	WM017.2	WM018.2	WM019.1	WM019.40
12-Dec-06	A	14150	15670	15340		0									
18-Dec-06	R	13660	14880	16680		0.01									
17-Jan-07	R	14570	15490	16220		0.46	6								
13-Feb-07	R	12610	12450	10630		0									
21-Feb-07	R	11260	11400	12210		0	4		6	24	29	6	31		
13-Mar-07	R	12960	11990	10660		0.3	5.5	4	8	8	4	6	18		9.1
18-Mar-07	R	21310	21860	19500		3.36								**62**	
07-May-07	R	37800	41700	43900	Yes	0	**42**	**44**	**52**	**70**	26	24	22		**33**
09-May-07	A	33800	33500	37800	Yes	0									
16-May-07	A	28600	28860	29800	Yes	0.92			4	10	8				
03-Jun-07	R	12840	11670	11510		0.19								27	
04-Jun-07	R	14850	12840	11670		1.11									
06-Jun-07	R	38100	27300	14850	Yes	1.22		29	**106**	**90**	82				**64**
25-Jun-07	R	6970	7430	7620		0.03									
26-Jun-07	R	7540	6970	7430		0	4	8	4	4	8	6	1.9		2
11-Jul-07	R	6450	5430	5550		0.81			4	2	8				4
23-Jul-07	R	7480	7380	6590		0.77									
29-Jul-07	R	4680	4430	5700		0.04								**44**	
21-Aug-07	R	4670	5030	5220		0.07	1.9	1.9	1.9	1.9	1.9	1.9	6		1.9
04-Sep-07	R	4890	4880	4740		0			1.9	1.9	1.9				6
16-Sep-07	R	7260	7140	7160		0.26								2	
17-Sep-07	R	7520	7260	7140		0.26									
24-Oct-07	R	8530	9960	12130		0.03	6	9.1	7.3	3.6	1.9	6	11		4
13-Nov-07	R	14190	13970	15540	Yes	0.19	**44**	**54**	31	**46**	**56**	**42**	**92**		**48**
25-Nov-07	R	22370	26400	25210	Yes	0.1								**46**	
09-Dec-07	R	14860	14820	15820		0.15								6	
11-Dec-07	R	12090	14570	14860		0.34			16	8	6				16
02-Jan-08	R	14520	14540	15520		0.95			10	38	11				24
25-Feb-08	R	17940	18990	19480		0.34	25	10	13	22	**46**	14	**46**		13
26-Feb-08	R	17490	17940	18990		0.34								18	
17-Mar-08	R	25080	26600	27500	Yes	0									

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM9.00	WM9.80	WM12.0	WM15.0	WM16.0	WM017.2	WM018.2	WM019.1	WM019.40
19-Mar-08	A	23580	24310	25080	Yes	0.47									
13-Apr-08	R	63100	57700	53800	Yes	0.4								**93**	
23-Apr-08	R	71500	74100	76700	Yes	0									
28-Apr-08	R	37700	42700	54600	Yes	1.06	6	3.6	11	10	6	8	10		2
11-May-08	A	29900	32570	35100	Yes	0.03			4	2	2.7				2
14-May-08	R	21100	23890	25740	Yes	0			1.9	1.9	3.6				4
15-Jun-08	R	18190	19680	21250		0.23								4	
18-Jun-08	R	30400	20400	18720	Yes	0.51	1.9	2	3.6	4	4	1.9	11		2
16-Jul-08	R	11080	10700	9260		0									
10-Aug-08	R	68900	83400	77700	Yes	2.16								**360**	
11-Aug-08	R	52700	68900	83400	Yes	2.11	**142**	**116**	**112**	**90**	**116**	**94**	**154**		**124**
13-Oct-08	R	10350	9940	10410		0								1.9	
20-Oct-08	R	11110	10300	9990		0									
02-Nov-08	R	18470	21230	24000	Yes	0								18	
04-Nov-08	R	15630	16930	18470	Yes	0	16	8	10	15	10	20	22		14
18-Nov-08	R	33500	43800	39300	Yes	1.36	**120**	**98**	**160**	**120**	**100**	**140**	**140**		**120**
19-Nov-08	R	28200	33500	43800	Yes	0.92									

Stations WM 20 through 28

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM20.0	WM22.0	WM23.0	WM24.0	WM26.0	WM26.9	WM27.0	WM28.0
06-Jan-02	R	3310	3310	4020		0					29			2.9
22-Jan-02	R	3780	3820	3740		0.56								
03-Feb-02	R	4300	4010	4460		0.98					2.9			2.9
11-Feb-02	R	4970	3870	4180		0.99								
04-Mar-02	R	17590	12910	11880		0.84								
17-Mar-02	R	14360	15690	17450		0.26					3.6			2.9
01-Apr-02	R	21040	15670	12000		0.91								
21-Apr-02	R	42400	52900	63900	Yes	0.01	3.6	3.6	3.6		23		43	43
08-May-02	R	18850	19750	21410		0								
12-May-02	R	14120	15530	15750		0.63	2.9	2.9	2.9		2.9			2.9

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM20.0	WM22.0	WM23.0	WM24.0	WM26.0	WM26.9	WM27.0	WM28.0
21-May-02	A	22400	25100	28100	Yes	0.73								
23-May-02	A	17160	19400	22400	Yes	0.06								
05-Jun-02	R	14200	14270	14860		0.06								
16-Jun-02	R	23960	28630	40100	Yes	1.01	240	43	43	43	93	240	23	23
17-Jun-02	R	25100	23960	28630	Yes	0.99								
19-Jun-02	R	19440	22050	25100	Yes	0.09								
20-Jun-02	R	16660	19440	22050	Yes	0								
21-Jul-02	R	6640	7260	7720		0.34	2.9	3.6	3.6	9.1	9.1	15	15	9.1
24-Jul-02	R	7480	8380	8590		0.83								
29-Jul-02	R	7680	6610	6440		0.46								
30-Jul-02	R	8020	7680	6610		0.47								
31-Jul-02	R	7520	8020	7680		0.47								
11-Aug-02	R	4270	5490	6460		0	3.6	9.1	2.9	3.6	3.6	2.9	3.6	2.9
12-Aug-02	R	5220	4270	5490		0								
21-Aug-02	R	4010	3940	4270		0								
11-Sep-02	R	5070	4400	4140		0.05								
22-Sep-02	R	4890	5200	5350		0	9.1	2.9	3.6	2.9	2.9	3.6	3.6	2.9
26-Sep-02	R	4800	5000	4830		1.64								
16-Oct-02	R	5500	5030	5890		2.1								
20-Oct-02	R	7090	7400	8100		0.66					9.1	2.9	3.6	3.6
28-Oct-02	R	5390	4890	4710		1.2								
31-Oct-02	A	5970	6190	5530		0								
17-Nov-02	R	7540	8370	7760		1.37	9.1	**93**	23	2.9	9.1	23	**93**	23
18-Nov-02	R	8200	7540	8370		1.7								
04-Dec-02	R	6010	6390	7220		0.03								
15-Dec-02	R	6620	4700	4400		2.27					9.1	3.6	**93**	75
16-Dec-02	R	8390	6620	4700		1.85								
18-Dec-02	R	7050	8130	8390		0.1								
19-Dec-02	R	6220	7050	8130		0				3				
29-Dec-02	A	6410	5870	6650		0.91								
13-Jan-03	R	4990	4830	4910		0.09								

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM20.0	WM22.0	WM23.0	WM24.0	WM26.0	WM26.9	WM27.0	WM28.0
11-Feb-03	R	4840	4920	4920		0.04								
12-Feb-03	R	4960	4840	4920		0.16								
23-Feb-03	R	4940	4690	4720		1.28	2.9	2.9	2.9	2.9	15			2.9
17-Mar-03	R	5320	4930	4820		0								
19-Mar-03	R	6420	5980	5320		0								
23-Mar-03	R	15580	11070	8780		1.15	2.9	2.9	2.9	2.9	2.9	3.6		2.9
31-Mar-03	R	59600	50000	37500	Yes	1.24								
07-Apr-03	R	17980	19640	23210	Yes	0.38								
16-Apr-03	R	29100	23010	23140		0								
27-Apr-03	R	23400	22300	23930		1.66	2.9	2.9	2.9	2.9	3.6	2.9	9.1	2.9
30-Apr-03	R	22000	23500	23800		0.61								
05-May-03	R	25900	34400	28800	Yes	0.11								
07-May-03	R	19590	20630	25900	Yes	0.23								
18-May-03	R	12490	11750	14700		0	2.9	2.9	3.6	2.9	2.9	7.3	2.9	8.3
21-May-03	R	9960	11540	11200		0.4								
22-May-03	R	9650	9960	11540		0.4								
04-Jun-03	R	10170	11360	12800		0.72								
08-Jun-03	R	17020	16530	13620		0.48	2.9	2.9	2.9	2.9	9.1			2.9
09-Jun-03	R	13670	17020	16530		0.38								
18-Jun-03	R	16770	21170	23870		0.24								
06-Jul-03	R	6650	6660	6800		0.26	2.9	3.6	2.9	2.9	3.6	3		3.6
14-Jul-03	R	6060	6060	5520		0.46								
16-Jul-03	R	5690	6200	6060		0.41								
21-Jul-03	R	5600	5120	4910		0								
31-Jul-03	R	5560	5400	5670		0.1								
04-Aug-03	R	6030	5420	5450		0.73								
05-Aug-03	R	5960	6030	5420		0.23								
13-Aug-03	R	11560	16640	14600		2.18								
17-Aug-03	R	8340	8130	8890		0.2	9.1	9.1	9.1	2.9	3.6			3.6
27-Aug-03	R	5580	5650	5800		0.01								
08-Sep-03	R	6450	6210	6480		0								

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM20.0	WM22.0	WM23.0	WM24.0	WM26.0	WM26.9	WM27.0	WM28.0
10-Sep-03	R	5570	5780	6450		0								
15-Sep-03	R	5430	4960	4850		0								
25-Sep-03	R	12520	10140	7660		0.2								
28-Sep-03	R	8570	9560	10470		1.38	11	15	9.1	3.6	2.9	**93**	14	43
08-Oct-03	R	11060	13030	13090		0								
14-Oct-03	R	12380	13330	7970		0.7								
22-Oct-03	R	42100	19090	14430	Yes	0.26								
26-Oct-03	R	19370	20300	25110	Yes	0.23	23	23	23	43	**93**		43	43
03-Nov-03	R	30800	35800	48700	Yes	0.4								
05-Nov-03	R	26300	27900	30800	Yes	0.99								
11-Nov-03	A	16300	17150	18970		0.09								
18-Nov-03	A	20180	19620	20980		0								
19-Nov-03	R	15770	20180	19620		0								
23-Nov-03	A	35500	46300	60100	Yes	1.29								
07-Dec-03	R	15900	17020	17450	Yes	1.14						3.6		
08-Dec-03	R	14690	15900	17020	Yes	1.14								
10-Dec-03	R	15510	13790	14690		0.57								
11-Jan-04	A	20240	18720	17640		0								
09-Feb-04	R	13080	12620	12770		0.72								
17-Feb-04	R	12580	12820	12720		0								
22-Feb-04	R	12070	12220	12200		1.12	2.9	2.9	2.9	2.9	3.6	2.9	3.6	2.9
25-Feb-04	R	12250	12440	12460		0.56								
21-Mar-04	R	9880	10490	11200		0.7	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
22-Mar-04	R	10260	9880	10490		0.7								
24-Mar-04	R	9680	10110	10260		0.35								
21-Apr-04	R	33100	32900	34000	Yes	0								
26-Apr-04	R	19090	21400	24200	Yes	0.69								
02-May-04	R	11200	14370	16000		0	2.9	2.9	2.9	3	9.1	2.9	7.3	3.6
19-May-04	R	10630	9680	9770		0.7								
02-Jun-04	R	11290	12480	14400		0.18								
13-Jun-04	R	5490	5650	6530		0.02	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM20.0	WM22.0	WM23.0	WM24.0	WM26.0	WM26.9	WM27.0	WM28.0
14-Jun-04	R	5770	5490	5650		0.03								
23-Jun-04	R	5290	5280	5220		0.13								
18-Jul-04	R	7280	5710	6370		0.07	2.9	2.9	2.9	2.9	2.9		2.9	3.6
21-Jul-04	R	7760	7230	8260		0.15								
25-Jul-04	R	13750	9560	7590		0.47								
28-Jul-04	R	8150	8790	9650		0.3								
22-Aug-04	R	12790	13110	12990		1.61	9.1	9.1	7.3	3.6	43	23	15	3.6
25-Aug-04	R	11430	12490	13630		0								
30-Aug-04	R	10390	8250	8590		0								
21-Sep-04	R	11620	12240	10020		1.94								
26-Sep-04	R	9050	9360	10680		0	3.6	3.6	23	2.9	2.9	2.9	2.9	2.9
29-Sep-04	R	9680	9290	9370		0.12								
30-Sep-04	R	9980	9680	9290		0.12								
05-Oct-04	R	8680	8700	7350		0.17								
13-Oct-04	R	7660	7100	7370		0.2								
19-Oct-04	R	10930	14600	15590		1.4								
24-Oct-04	R	9850	9730	8140		0	9.1	43	3.6	3.6	3.6	3.6	3.6	3.6
14-Nov-04	R	8060	7900	8150		0.11	23	9.1	23	2.9	2.9	2.9	2.9	3.6
15-Nov-04	R	6830	8060	7900		0.11								
17-Nov-04	R	6550	7540	6830		0								
13-Dec-04	R	13710	14270	14730		0.56								
01-Feb-05	R	10120	9720	10690		0		2.9	2.9	2.9	23	23	23	3.6
22-Feb-05	R	12310	12650	13760		0.38								
22-Mar-05	R	14320	12730	11600		0								
20-Apr-05	A	33700	34700	29200	Yes	0.23								
27-Apr-05	R	89600	105800	95800	Yes	3.16	**93**	23	9.1	**93**	9.1		**93**	**240**
10-May-05	R	33100	36600	38500	Yes	1.51								
11-May-05	R	30660	33100	36600	Yes	0.46								
22-May-05	R	18230	18550	18790		0.92	3.6	9.1	3.6	9.1	9.1	2.9	3.6	2.9
15-Jun-05	R	32300	17080	16480	Yes	2.18								
26-Jun-05	R	14440	15820	19460	Yes	0	9.1	3.6	9.1	3.6	2.9	7.3	2.9	43

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM20.0	WM22.0	WM23.0	WM24.0	WM26.0	WM26.9	WM27.0	WM28.0
05-Jul-05	R	10330	10900	11160		0.03								
20-Jul-05	R	7960	8170	9300		0.02								
21-Jul-05	R	7810	7960	8170		0.02	23	23	**93**	31	15	21	15	43
27-Jul-05	R	6880	6780	7640		0.95								
28-Jul-05	R	7750	6880	6780		0.95								
21-Aug-05	R	5030	4400	4850		0.02	9.1	23	**93**	23	**93**	**93**	9.1	23
22-Aug-05	R	6140	5030	4400		0.02								
23-Aug-05	R	5900	6140	5030		0.12								
07-Sep-05	R	4630	6220	9020		0.05								
08-Sep-05	R	5380	4630	6220		0								
18-Sep-05	R	6750	6940	6710		1.76	9.1	43	39	**460**	23	**460**	**460**	9.1
20-Sep-05	R	7200	7620	6750		1.54								
21-Sep-05	R	6850	7200	7620		0.33								
27-Sep-05	R	7840	7950	7470		0.47								
06-Nov-05	R	28100	30960	34800	Yes	0.04	9.1	9.1	9.1	7.3	23	93	23	23
07-Nov-05	R	29000	28100	30960	Yes	0.31								
21-Nov-05	R	38700	45200	52800	Yes	0								
12-Dec-05	A	17450	17890	19530	Yes	0.91								
19-Dec-05	A	13710	12420	12380		0.83								
10-Jan-06	A	13220	13880	14410		0.02								
30-Jan-06	A	20200	20100	20740	Yes	0.37								
05-Feb-06	A	40200	26420	20790	Yes	2.66								
08-Feb-06	A	34000	45300	57300	Yes	1.3								
21-Feb-06	A	17480	17880	18210		0								
20-Mar-06	R	14730	16490	17820	Yes	0								
22-Mar-06	R	12030	13160	14730		0	2.9		2.9	2.9		2.9		2.9
27-Mar-06	R	13630	11330	11070		0								
28-Mar-06	R	14040	13630	11330		0								
23-Apr-06	R	14000	14570	16600		0								
08-May-06	R	10170	12780	14730		0.02								
21-May-06	R	44400	42500	35600	Yes	0.83	14	9.1	43	2.9	3.6	9.1	11	9.1

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM20.0	WM22.0	WM23.0	WM24.0	WM26.0	WM26.9	WM27.0	WM28.0
19-Jun-06	R	19290	23270	28300	Yes	0								
25-Jun-06	R	17380	17410	18580		0.76	3.6	2.9	2.9	23	2.9	3.6	9.1	3
26-Jun-06	R	16960	17380	17410		0.95								
27-Jun-06	R	20360	16960	17380		0.65								
17-Jul-06	R	10720	10400	9750		0								
14-Aug-06	R	8400	9160	8940		0.11								
23-Aug-06	R	12650	13220	11410		1.01								
06-Sep-06	R	8310	9770	8630		1.17	2	1.9	2	6	1.9	1.9	2	2
11-Sep-06	A	9460	9370	9780		0.43		16			4		10	
13-Sep-06	R	9870	9460	9460		0								
25-Sep-06	R	9710	10320	9520		0.49								
26-Sep-06	R	7390	9710	10320		0.49								
27-Sep-06	R	7360	7390	9710		0.22								
15-Oct-06	R	19080	22280	32000	Yes	1.85	12	1.9	2	7.3	10	1.9	6	4
18-Oct-06	R	11730	12490	14420	Yes	0.67								
07-Nov-06	R	19960	21720	24720	Yes	0								
19-Nov-06	R	59800	84500	53900	Yes	0.98	**160**	8	4	4				
06-Dec-06	R	20940	24100	29200	Yes	0.16								
10-Dec-06	R	15340	16820	18180	Yes	0.2					2	2	4	2
12-Dec-06	A	14150	15670	15340		0								
18-Dec-06	R	13660	14880	16680		0.01	2	1.9	7.3	1.9				
17-Jan-07	R	14570	15490	16220		0.46								
13-Feb-07	R	12610	12450	10630		0								
21-Feb-07	R	11260	11400	12210		0								
13-Mar-07	R	12960	11990	10660		0.3								
18-Mar-07	R	21310	21860	19500		3.36	24	1.9	2	4	**50**		9.1	20
07-May-07	R	37800	41700	43900	Yes	0								
09-May-07	A	33800	33500	37800	Yes	0								
16-May-07	A	28600	28860	29800	Yes	0.92								
03-Jun-07	R	12840	11670	11510		0.19	1.9	2	1.9	4	1.9	5.5	1.9	34
04-Jun-07	R	14850	12840	11670		1.11								

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM20.0	WM22.0	WM23.0	WM24.0	WM26.0	WM26.9	WM27.0	WM28.0
06-Jun-07	R	38100	27300	14850	Yes	1.22								
25-Jun-07	R	6970	7430	7620		0.03						1.9		
26-Jun-07	R	7540	6970	7430		0								
11-Jul-07	R	6450	5430	5550		0.81								
23-Jul-07	R	7480	7380	6590		0.77								
29-Jul-07	R	4680	4430	5700		0.04	6	2	1.9	2	1.9	2	1.9	10
21-Aug-07	R	4670	5030	5220		0.07								
04-Sep-07	R	4890	4880	4740		0								
16-Sep-07	R	7260	7140	7160		0.26	1.9	2	1.9	1.9	1.9	1.9	1.9	1.9
17-Sep-07	R	7520	7260	7140		0.26								
24-Oct-07	R	8530	9960	12130		0.03								
13-Nov-07	R	14190	13970	15540	Yes	0.19								
25-Nov-07	R	22370	26400	25210	Yes	0.1	**36**	22	**44**	**42**	**38**	**56**	7.3	**32**
09-Dec-07	R	14860	14820	15820		0.15	1.9	1.9	4	2	11	1.9	2	2
11-Dec-07	R	12090	14570	14860		0.34								
02-Jan-08	R	14520	14540	15520		0.95								
25-Feb-08	R	17940	18990	19480		0.34								
26-Feb-08	R	17490	17940	18990		0.34	2	1.9	1.9	1.9	16	8	8	4
17-Mar-08	R	25080	26600	27500	Yes	0					4	8	12	
19-Mar-08	A	23580	24310	25080	Yes	0.47								
13-Apr-08	R	63100	57700	53800	Yes	0.4	1.9	4	1.9	5.5	**40**	8	2	2
23-Apr-08	R	71500	74100	76700	Yes	0								
28-Apr-08	R	37700	42700	54600	Yes	1.06								
11-May-08	A	29900	32570	35100	Yes	0.03								
14-May-08	R	21100	23890	25740	Yes	0								
15-Jun-08	R	18190	19680	21250		0.23	1.9	10	1.9	1.9	2	1.9	1.9	5.5
18-Jun-08	R	30400	20400	18720	Yes	0.51								
16-Jul-08	R	11080	10700	9260		0					2	1.9	1.9	
10-Aug-08	R	68900	83400	77700	Yes	2.16	**280**	**220**	**220**	**280**	**96**	**152**	**160**	**100**
11-Aug-08	R	52700	68900	83400	Yes	2.11								
13-Oct-08	R	10350	9940	10410		0	1.9	1.9	1.9	1.9	1.9	1.9	2	1.9

Date	Strat	Q1	Q2	Q3	Exceeded 30K	sum rain	WM20.0	WM22.0	WM23.0	WM24.0	WM26.0	WM26.9	WM27.0	WM28.0
20-Oct-08	R	11110	10300	9990		0								
02-Nov-08	R	18470	21230	24000	Yes	0	1.9	2	7.3	2	2	1.9	1.9	4
04-Nov-08	R	15630	16930	18470	Yes	0								
18-Nov-08	R	33500	43800	39300	Yes	1.36								
19-Nov-08	R	28200	33500	43800	Yes	0.92								