Technical Memorandum

CAPE COD WATERSHEDS
2009 DWM WATER QUALITY MONITORING DATA

December 2013

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Division of Watershed Management
DWM Control Number CN 344.1

COMMONWEALTH OF MASSACHUSETTS
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Introduction

The Cape Cod Watersheds are a series of smaller watersheds, largely groundwater fed, that are located from Bourne and Falmouth to Truro. These watersheds were surveyed in 2009. Water quality samples were collected and analyzed for nutrients, bacteria, color and turbidity, and dissolved metals. Other sampling efforts included continuous dissolved oxygen/temperature data collection, lake investigations, benthic macroinvertebrate sampling, periphyton/phytoplankton sampling, cyanobacteria sample collection, fish toxics monitoring, and fish population sampling as part of the Division of Watershed Management (DWM) monitoring program. Macroinvertebrate, periphyton, cyanobacteria and fish toxics/population data are presented in separate technical memoranda.

Project Objectives

The 2009 surveys of the Cape Cod watersheds focused on obtaining information to meet the following objectives (MassDEP 2009b):

1. Collect nutrient (total phosphorus, total nitrogen, ammonia-nitrogen), dissolved oxygen, temperature, pH, conductivity, color and turbidity data to provide information for assessing the Aquatic Life Use.

2. Collect dissolved oxygen profiles along with temperature, pH, conductivity, color, and Secchi disk data at lake stations to provide information for assessing the Aquatic Life and Aesthetics uses.

3. Collect nutrient samples at input points from cranberry bogs to lakes. Collections to be made at input points on lakes scheduled for sampling during the 2009 sample season. Lakes have between 0 and 4 bog inputs each. Data will provide information to staff developing TMDL and nutrient loading information for Cape Cod lakes.

4. Collect long-term continuous temperature data at sites within the watershed to provide more temperature information on cold/warmwater fisheries. Data are to be used to better assess the Aquatic Life Use.

5. Collect *E. coli* data at up to 29 stations to provide information for assessing the Primary and Secondary Contact Recreation Use.

6. Collect observation data regarding objectionable deposits and odors, floating debris or scum, and nuisance species of aquatic life at stations to provide information for assessing the Aesthetic Use.

7. Collect water samples for hardness testing at sites to assess potential for metals toxicity. Data will be used to assess the Aquatic Life Use.

8. Collect dissolved metals samples to assess the Aquatic Life Use.

9. Collect benthic macroinvertebrate community data and complete habitat assessments at stations to provide information for assessing the Aquatic Life Use.

10. Collect phytoplankton and benthic algal investigations (depending on habitat) at all benthic macroinvertebrate sampling stations to provide information for assessing the Aquatic Life Use, as well as the Primary and Secondary Contact Recreation and Aesthetics uses.

11. Collect chlorophyll a and phytoplankton samples at lakes to provide information for assessing the Aquatic Life and Aesthetics uses.

12. Collect fish tissue contaminant (Hg) data from lakes for public health risk assessment by the Massachusetts Department of Public Health (DPH).

13. Sample fish populations for up to five rivers to determine population structure and dynamics for the Aquatic Life Use.

Note: As stated above, objectives 9-13 will be reported in separate technical memoranda.

Additional information regarding project objectives may be found in the 2009 Cape Cod Watersheds Sampling Plan (MassDEP 2009b) and the 2009 DWM Environmental Monitoring Overview - CN332.0 (MassDEP 2009a).

Sampling Plan

The specific sampling activities of the 2009 Cape Cod Watersheds Surveys are listed below. A total of 60 river/impoundment/lake stations were sampled, including water quality and attended/unattended multiprobe or thermistor deployment efforts. Data collected included grab samples to examine a variety of water quality components as well as continuous dissolved oxygen and temperature measurements from deployed multiprobes and thermistors and in-situ multiprobe measurements for temperature, dissolved oxygen, % oxygen saturation, pH, specific conductance, and total dissolved solids (MassDEP 2009a, 2009b). Unattended multiprobes were deployed at 10 sites for approximately 5 days of continuous data collection. The thermistors were deployed at 12 sites for approximately 4-5 months of continuous data collection. At times during the summer, water levels at some sites were too low to deploy unattended probes or to take certain water quality samples. A summary of the types and frequency of sampling is provided in Table 1 below. Table 2 provides detailed information on site locations and which parameters were collected at each site. Table 3 summarizes which analytes were collected on which dates during 2009. A map of Cape Cod Watersheds 2009 sampling stations is provided in Figure 1. Note that the watershed designations for two thermistor sites (Unique IDs W2072 and W2078) were subsequently changed from Cape Cod to Buzzards Bay. The data are included in this technical memorandum but will need to be used for assessment purposes as part of the Buzzards Bay analysis.

Table 1. Types of water quality sampling and deployments conducted in the Cape Cod Watersheds during 2009.

Analyte(s) or investigation type	Number of 2009 Cape Cod sites sampled	Maximum number of collection visits per site
Water Quality: Bacteria (*E. coli)*	29	6
Water Quality: Nutrients - Total Nitrogen, Ammonia, Total Phosphorus	37	5
Chlorophyll a	8	2
Color, Turbidity	34	5
Hardness	21	5
Dissolved Metals: Al, Sb, As, Be, Cd, Cr, Cu, Pb, Ni, Se, Ag, Tl, Zn, Ca, Mg, Hardness	8	3
Attended Multiprobe	37	8
Unattended (Deployed) Multiprobe	10	4 (5-day deploys)
Deployed Temperature Probes (Thermistors)	19	One 4-5 month deploy per site

Quality Assurance (QA) and Quality Control (QC)

Quality assurance and quality control procedures used in collecting samples and measurements were consistent with the prevailing DWM protocols that are described in CN 1.21 - Sample Collection Techniques for DWM Surface Water Quality Monitoring (MassDEP 2004), CN 4.21 - Water Quality Multiprobe Data Collection (MassDEP 2005b) and CN 4.41 - Multiprobe Sonde Deployments for Continuous Unattended Water Quality Data Collection (MassDEP 2007a). Metal samples were collected using MassDEP metals protocol (CN 101.1) described in MassDEP 2007b. For a description of the DWM's general approach to watershed monitoring, see the MADEP, DWM QAPP for Surface Water Monitoring and Assessment, 2005-2009 (MassDEP 2005a).

The DWM quality assurance and database management staff reviewed laboratory data reports and all multiprobe data. The data were validated and finalized per data validation procedures outlined in CN 56.15 - DWM Water Quality Data Validation Process (Summary) (MassDEP 2012a). All water quality sample data were validated by reviewing QC sample results, analytical holding time compliance, QC sample frequency and related ancillary data/documentation (at a minimum). A complete summary of the data review process for all 2009 DWM data is provided in CN 362.0 – Water Quality Data Validation Report for Year 2009 Project Data (MassDEP 2012b). Appendix 1 of this technical memorandum contains definitions for all data qualifiers.

Field and Analytical Methods

Procedures used for water quality sampling and sample handling are described in CN 1.21 - Sample Collection Techniques for DWM Surface Water Quality Monitoring (MassDEP 2004). Analytical methods used at the Wall Experiment Station (WES) are included in CN225.0. Procedures used for multiprobe calibration and deployment are described in CN 4.21 - Water Quality Multiprobe Data Collection (MassDEP 2005b) and CN 4.41 - Multiprobe Sonde Deployments for Continuous Unattended Water Quality Data Collection (MassDEP 2007a).

Concurrent with the collection of water quality samples, site characteristics and sampling conditions were recorded on DWM field sheets. Riparian vegetation, observed uses (e.g. swimming, boating, fishing), potential pollution sources, the presence/absence of objectionable deposits (trash, debris and scum), the extent of periphyton/algae/aquatic plant growth within the sampling reach, and sampling conditions were all noted at each station.

Table 2. MassDEP DWM 2009 Cape Cod Watershed sampling station descriptions, number of samples or deployments and sampling parameters.

Station Type	Unique ID (map link)	Waterbody	Description	Latitude	Longitude	Nutrients	*E. coli*	Color/Turbidity	Hardness	Metals	Chlorophyll	Attended Probe	Deployed Multiprobe	Deployed Thermistor
Stream	W1905	Coonamessett River	[Sandwich Road, Falmouth]	41.59857	-70.5715	5	6	5	5	3		8	3	1
Stream	W1906	Coonamessett River	[Route 28, Falmouth]	41.57789	-70.5737	5	6	5	5	3		6	3	
Stream	W1907	Unnamed Tributary	[cranberry bog channel, Old Barnstable Road, Falmouth]	41.58542	-70.563	5	6	5	3	3				
Stream	W1908	Childs River	[Carriage Shop Road, Falmouth]	41.59314	-70.5249	5	6	5	3	3				
Stream	W1917	Unnamed Tributary	[unnamed tributary to the Herring River, Pole Dike Road, Wellfleet]	41.94782	-70.0444	5	6	5	5	3				
Stream	W1909	Quashnet River	[Martin Road, Falmouth]	41.59215	-70.5078	5	6	5	5	3		2		1
Stream	W1910	Quashnet River	[Route 151, Mashpee]	41.61775	-70.5006	5	6	5				6	3	
Stream	W1916	Herring River	[Bound Brook Island Road, Wellfleet]	41.95352	-70.0572	5	6	5	5	3		8	4	
Stream	W1911	Mashpee River	[downstream of Quinaquisset Avenue and Route 28 at old bridge crossing, Mashpee]	41.62155	-70.4804	5	6	5				8	3	1
Stream	W1915	Herring River	[Route 6, Wellfleet]	41.95939	-70.03	5	6	5	5	3		8	4	
Stream	W1912	Santuit River	[Old Mill Road/Old Kings Road, Mashpee/Barnstable]	41.62788	-70.4508	5	6	5				8	3	1
Stream	W1913	Little River	[Old Post Road, Barnstable]	41.62654	-70.4263	5	6	5						
Stream	W1918	Red River	[west of the Shirley Drive cul-de-sac, Chatham/Harwich]	41.675	-70.0349	5	6	5						
Stream	W1919	Unnamed Tributary	[unnamed tributary to the Herring River, Great Western Road, Harwich]	41.68631	-70.0947	5	6	5						
Stream	W1920	Herring River	[Main Street, (North Harwich) Harwich]	41.69516	-70.1153	5	6	5				6	3	
Stream	W1914	Unnamed Tributary	[unnamed tributary to Halls Creek, Craigville Beach Road, Barnstable]	41.63909	-70.3222	5	6	5						
Stream	W1925	Hawes Run	[approximately 900 feet downstream from Buck Island Road, Yarmouth]	41.66169	-70.2611	5	6	5						
Stream	W1924	Whites Brook	[Route 6A, Yarmouth]	41.70487	-70.2237	5	6	5				6	3	

Station Type	Unique ID (map link)	Waterbody	Description	Latitude	Longitude	Nutrients	*E. coli*	Color/Turbidity	Hardness	Metals	Chlorophyll	Attended Probe	Deployed Multiprobe	Deployed Thermistor
Stream	W1921	Unnamed Tributary	[unnamed tributary to Freemans Pond, the northern most tributary on the eastern side of Lower Road, Brewster]	41.75748	-70.1043	5	6	5						
Stream	W1923	Chase Garden Creek	[Beach Street, Dennis]	41.73634	-70.2006	5	6	5						
Stream	W1926	Unnamed Pond	[top of fish ladder into Quivett Creek, at outlet of unnamed pond, Brewster/Dennis]	41.74327	-70.1453	5	6	5						
Stream	W1277	Unnamed Tributary	[unnamed tributary to the southeastern end of Upper Mill Pond, Brewster]	41.7258	-70.1152	3		3	2					
Stream	W1239	Unnamed Tributary	[unnamed tributary to Hinckleys Pond, southeast bog inlet, Harwich]	41.70944	-70.0836	1		1	1					
Stream	W2123	Unnamed Tributary	[unnamed tributary to the northern edge of Lovells Pond, by the fallow bog pump house, Barnstable]	41.6512	-70.4411	1		1	1					
Stream	W1985	Unnamed Tributary	[unnamed tributary to western edge of Lovells Pond from cranberry bog straddling the Mashpee/Barnstable border, Wimbledon Way, Barnstable]	41.64977	-70.4459	3		3	2					
Stream	W1986	Unnamed Tributary	[unnamed tributary to western edge of Lovells Pond from cranberry bog southeast of Santuit Pond, Mashpee approximately 220 feet upstream of Santuit Newton Road, Barnstable]	41.64915	-70.4463	1		1	1					
Stream	W0744	Unnamed Tributary	[cranberry bog ditch inlet of Santuit Pond, southeast of Cranberry Lane on northeastern shore, Mashpee]	41.65531	-70.4564	2								
Stream	W2124	Unnamed Tributary	[unnamed tributary to western edge of Hinkleys Pond from southeastern corner of cranberry bog, Harwich]	41.71431	-70.0971	1								
Lake	W0739	Santuit Pond	[deep hole in mid pond "narrows", Mashpee]	41.65325	-70.4563	3		3	1		2	3		
Lake	W0746	Walkers Pond	[deep hole, mid pond, Brewster]	41.72232	-70.1254	3		3	1		2	3		
Lake	W0747	Upper Mill Pond	[deep hole, middle of southeastern lobe, Brewster]	41.72769	-70.1176	3		3	1		1	3		

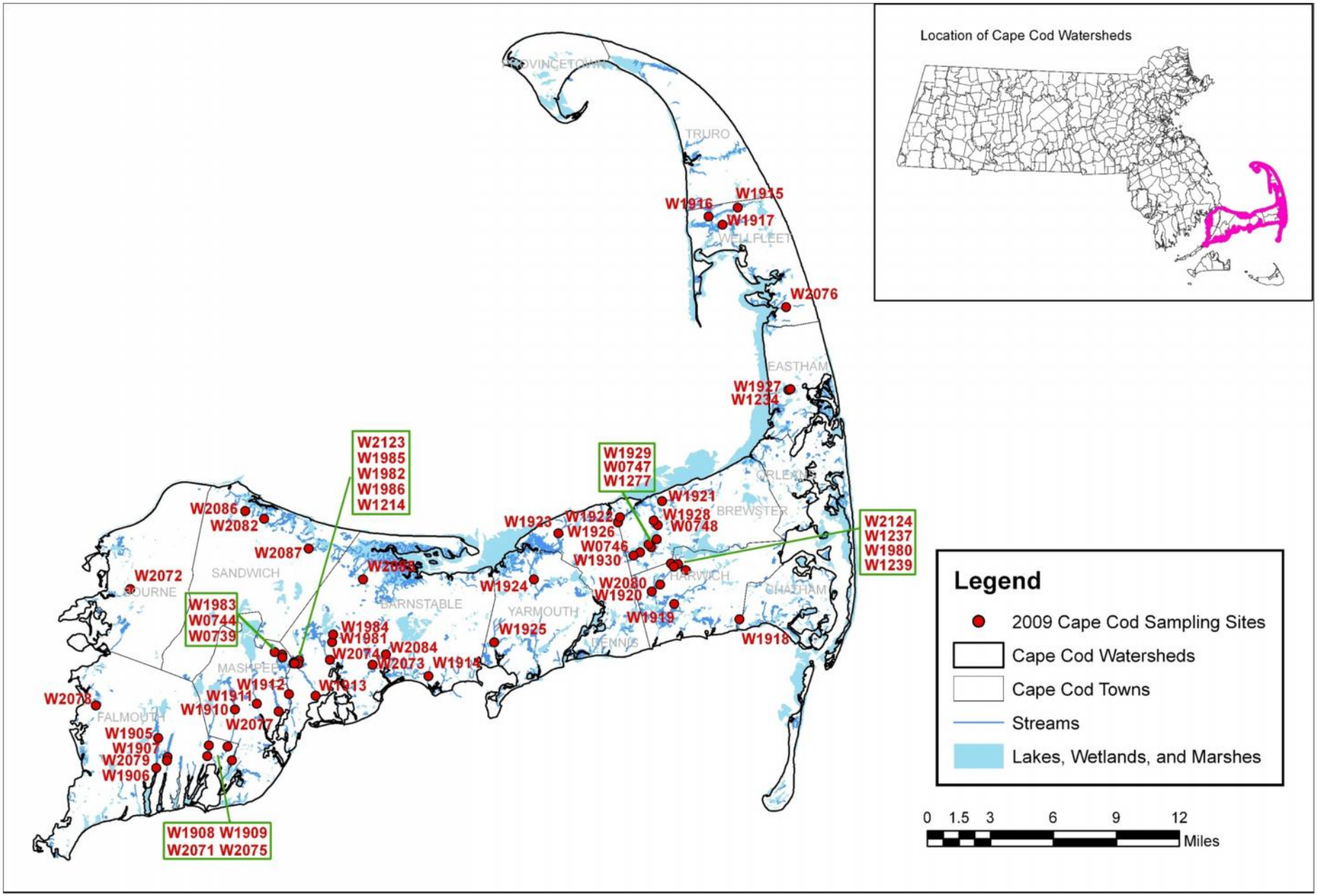
Station Type	Unique ID (map link)	Waterbody	Description	Latitude	Longitude	Nutrients	*E. coli*	Color/Turbidity	Hardness	Metals	Chlorophyll	Attended Probe	Deployed Multiprobe	Deployed Thermistor
Lake	W0748	Lower Mill Pond	[deep hole, mid pond, Brewster]	41.74096	-70.1088	3		3	1		2	3		
Lake	W1214	Lovells Pond	[deep hole, Barnstable]	41.64876	-70.4419	4		3	1		2	3		
Lake	W1234	Great Pond	[deep hole, Eastham]	41.83281	-69.9861	3		3	1		2	3		
Lake	W1237	Hinckleys Pond	[deep hole, Harwich]	41.71378	-70.0906	3		3	1		2	3		
Lake	W1927	Great Pond	[at the eastern beach, Eastham]	41.83332	-69.9842		6							
Lake	W1928	Lower Mill Pond	[top of fish ladder at pond outlet, Brewster]	41.7441	-70.1124		6							
Lake	W1929	Upper Mill Pond	[public boat launch on eastern shore, west off Run Hill Road, Brewster]	41.73123	-70.11		6							
Lake	W1930	Walkers Pond	[public boat launch on southwestern shore, east off Slough Road, Brewster]	41.72015	-70.1317		6							
Lake	W1980	Hinckleys Pond	[near Edith Grove Road, at outlet on southwestern shore, Harwich]	41.71209	-70.0946		6							
Lake	W1981	Hamblin Pond	[public boat launch on southeastern shore, west of Route 149 near Marstons Mills Cemetery, Barnstable]	41.66334	-70.4105	1	6					1		
Lake	W1982	Lovells Pond	[public boat launch on western shore, east off Santuit Newton Road, Barnstable]	41.64887	-70.4453		6					1		
Lake	W1983	Santuit Pond	[public boat launch on northwestern shore, east off Timberlane Drive, Mashpee]	41.65708	-70.4633		6					1		
Lake	W1984	Hamblin Pond	[deephole, approximate center of northern lobe, Barnstable]	41.66859	-70.4094	2		2	1		2	2		
Deploy Only	W1922	Quivett Creek	[walking path crossing, Dennis/Brewster, south off Sea Street, Dennis]	41.74678	-70.1435							6	3	
Deploy Only	W2071	Childs River	[approximately 100 feet upstream of Barrow Road, Falmouth]	41.58561	-70.5265							2		1
Deploy Only	W2072	Unnamed Tributary	[unnamed tributary to Upper Pond, Four Ponds Conservation Area - 'Pine Trail' crossing, Bourne]	41.70172	-70.5959							2		1
Deploy Only	W2073	Unnamed Tributary	[unnamed tributary to Bumps River, approximately 950 feet upstream of Bumps River Road, Barnstable]	41.64741	-70.3735							2		1

Station Type	Unique ID (map link)	Waterbody	Description	Latitude	Longitude	Nutrients	*E. coli*	Color/Turbidity	Hardness	Metals	Chlorophyll	Attended Probe	Deployed Multiprobe	Deployed Thermistor
Deploy Only	W2074	Marstons Mills River	[Route 28, Falmouth]	41.65121	-70.4127							2		1
Deploy Only	W2075	Red Brook	[approximately 225 feet downstream of Red Brook Road, Mashpee/Falmouth]	41.58264	-70.5038							2		1
Deploy Only	W2076	Fresh Brook	[approximately 425 feet upstream of Route 6, Wellfleet]	41.89001	-69.9869							2		1
Deploy Only	W2077	Quaker Run	[approximately 1100 feet upstream from mouth at Bryants Cove, golf course cart path crossing, Mashpee]	41.61601	-70.4604							2		1
Deploy Only	W2078	Herring Brook	[at outlet of very small unnamed pond approximately 25 feet upstream of trail culvert north of the eastern end of Dale Drive, Falmouth]	41.62154	-70.6286							2		1
Deploy Only	W2079	Unnamed Tributary	[north of Route 28 and east of Prince Henry Drive, just downstream of culvert from cranberry bog south of Old Barnstable Road, Falmouth]	41.58281	-70.5636							2		1
Deploy Only	W2080	Herring River	[Route 6, Harwich]	41.69984	-70.1074							2		1
Deploy Only	W2082	Springhill Creek	[railroad crossing between Great Island and Spring Hill roads, Sandwich]	41.74913	-70.4717							2		1
Deploy Only	W2084	Bumps River	[Route 28, Barnstable]	41.6544	-70.3609							2		1
Deploy Only	W2085	Unnamed Tributary	[unnamed tributary to Boat Cove Creek, Willow Street (West Barnstable), Barnstable]	41.7065	-70.3812							2		1
Deploy Only	W2086	Unnamed Tributary	[unnamed tributary to Dock Creek, state fish hatchery outlet, upstream at Main Street, Sandwich]	41.75468	-70.489							2		1
Deploy Only	W2087	Unnamed Tributary	[unnamed tributary to Scorton Creek, outlet Nye Pond, east of Old Country Road, Sandwich]	41.72822	-70.4309							2		1

Table 3. MassDEP DWM 2009 Cape Cod Watersheds – Number of water quality sites sampled by date and by analyte (does not include water quality sonde deployments).

Analyte	5/19	6/23	6/24	6/25	7/28	7/29	8/13	8/20	9/1	9/2	9/3	9/9	9/10	9/23	9/25	9/30	10/1	10/5	10/6	10/7
Total Nitrogen	21	21	5	7	21	7			21	6	7	5		2	2	10	7		21	1
Ammonia-N	21	21	3	4	21	5			21	3	4	3		1		7	4		21	1
Nitrate/Nitrite-N			1																	
Total Phosphorus	21	21	5	7	21	7			21	6	7	5		2	2	10	7		21	1
E. coli	29	29			29		29		29										29	
True Color	21	21	3	4	21	5			21	3	4	3		1		6	3		21	
Turbidity	21	21	3	4	21	5			21	3	4	3		1		6	3		21	
Hardness		6	3	4	6	5		8			1	1	8	1				8		
Chlorophyll a			1	3		2				3	3	2		1						
Dissolved Metals								8					8					8		

Figure 1. MassDEP DWM 2009 monitoring station locations in the Cape Cod Watersheds.



Survey Conditions

Precipitation and stream discharge data were analyzed to estimate hydrological conditions during the 2009 water quality surveys in the Cape Cod Watersheds. Precipitation data collected during the survey period were downloaded from the National Oceanic and Atmospheric Administration (NOAA), National Climatic Data Center (NCDC) for the Hyannis Regional Airport, Hyannis MA (NOAA 2013a). Data were downloaded from http://cdo.ncdc.noaa.gov/qclcd/QCLCD?prior=N and the 20 year normals were downloaded from: http://gis.ncdc.noaa.gov/map/viewer/#app=cdo&cfg=cdo&theme=normals&layers=01&extent=-139.2:12.7:-50.4:57.8&node=gis. The precipitation totals on the water quality survey dates and the five days prior to the survey dates were extracted from the records. In addition, the monthly precipitation totals for 2009 and the twenty year monthly averages for the weather station were downloaded to determine if precipitation amounts in 2009 were above or below normal (Table 4).

Table 4. Total monthly precipitation in 2009 at Barnstable (Hyannis) Regional Airport, Barnstable, MA and the twenty year monthly average precipitation totals (NOAA 2013a).

Month	2009 Rainfall at Barnstable (Hyannis) Municipal Airport (inches)	20-Year Average Rainfall (1981-2000)
	Map Link	
Jan	3.79	3.66
Feb	1.43	3.32
Mar	3.19	4.47
Apr	5.54	3.85
May	2.41	3.2
Jun	3.85	3.37
Jul	6.07	2.81
Aug	4.94	3.2
Sep	3.6	3.49
Oct	7.52	3.73
Nov	2.05	4.04
Dec	4.24	4.17

Two USGS stream flow gages are located on Cape Cod. Analysis of these data is made difficult by the fact that flow from these gauges is largely determined by groundwater flow, not surface water. Stream discharge data from the two real-time United States Geological Survey (USGS) stream gage stations (Table 5) were downloaded from the USGS (USGS 2013a). In addition, the 7Q10 for one gage station was calculated using USGS StreamStats and included in Table 5. The entire period of record for each station was downloaded and the average daily discharge values on the water quality survey dates and the five days prior to the survey dates were extracted from these records. The percent of time that the average daily discharge on the extracted dates were equaled or exceeded during the entire period of record for the gage was calculated to put the discharge value into historical perspective. The precipitation and discharge data are summarized and presented in Table 6.

Table 5. USGS gage stations used to estimate the hydrological conditions in the Cape Cod Watersheds during the 2009 DWM water quality surveys and the estimated 7Q10 flows for the Herring River gauge (USGS 2013a, 2013b). 7Q10 Statistics were obtained from the USGS via http://streamstatsags.cr.usgs.gov/gages/viewer15.htm?stabbr=GAGES, http://streamstats.usgs.gov/massachusetts.html, or Ries 1998.

Site Name	Period of Record	7Q10 (cfs)	Remarks & Drainage	Lat/Long with Map Link
011058837 Quashnet River At Waquoit Village, MA	October 1988 to current year.	N/A	Flow at times includes overflow and leakage from Johns Pond. Occasional regulation by cranberry bog upstream and occasional backwater from tidal surge. Drainage: Surface drainage from topography, about 2.58 mi^2. The area excludes Johns Pond. This stream drains from a ground-water basin which is larger than, and not coincident with, the surface-water basin.	41.59222 -70.50833
01105880 Herring River At North Harwich, MA	June 1966 to September 1988, September 2007 to current year	0.884	Occasional regulation by cranberry bog upstream. This stream drains from a ground-water basin which is larger than, and not coincident with, the surface-water basin. Drainage: 9.4 mi^2.	41.69889 -70.11056
Flow Data and Statistics for USGS 011058837 Quashnet River at Waquoit Village, MA				
http://waterdata.usgs.gov/nwis/dv?cb_00060=on&format=rdb&period=&begin_date=1988-10-01&end_date=2013-02-19&site_no=011058837&referred_module=sw				
http://streamstatsags.cr.usgs.gov/gagepages/html/011058837.htm				
Flow Data and Statistics for USGS 01105880 Herring River at North Harwich, MA \				
http://nwis.waterdata.usgs.gov/nwis/dv?cb_00060=on&format=rdb&period=&begin_date=1966-06-28&end_date=2013-02-20&site_no=01105880&referred_module=sw				
http://streamstatsags.cr.usgs.gov/gagepages/html/01105880.htm				

Table 6. The precipitation totals (inches) and daily average discharge (cubic feet per second) for five days prior to and each DWM 2009 Cape Cod Watersheds survey or deploy date (USGS 2013a or 2013b) (NOAA 2013a).

Note: The percent of time that the daily average discharge was equaled or exceeded over the entire period of record at each stream gage are also provided (percent exceeded). Shaded dates indicate the deployment of multiprobes and bold dates indicate collection of water samples.

Sampling Date	Precipitation at Barnstable Airport (in)	Flow in cfs (Percent Exceeded)	
		01105880 Herring River at North Harwich, MA	011058837 Quashnet River at Waquoit Village, MA
5/14	0.03	15 (22.6)	25 (11.1)
5/15	0.09	15 (22.6)	25 (11.1)
5/16	0.00	15 (22.6)	25 (11.1)
5/17	0.06	14 (26.7)	25 (11.1)
5/18	0.04	21 (6.0)	24 (13.7)
5/19	0.00	24 (3.0)	24 (13.7)
6/14	0.07	13 (30.8)	23 (17.2)
6/15	0.00	12 (35.8)	23 (17.2)
6/16	0.00	11 (40.6)	22 (21.4)
6/17	0.00	11 (40.6)	21 (26.2)
6/18	0.05	10 (43.6)	21 (26.2)
6/19	0.41	11 (40.6)	22 (21.4)
6/20	0.00	12 (35.8)	21 (26.2)
6/21	0.03	11 (40.6)	21 (26.2)
6/22	0.43	11 (40.6)	24 (13.7)
6/23	0.55	12 (35.8)	25 (11.1)
6/24	0.00	13 (30.8)	24 (13.7)
6/25	0.00	12 (35.8)	22 (21.4)
7/19	0.00	12 (35.8)	25 (11.1)
7/20	0.00	11 (40.6)	28 (5.5)
7/21	0.32	11 (40.6)	26 (9.2)
7/22	0.01	12 (35.8)	20 (31.6)
7/23	0.39	11 (40.6)	20 (31.6)
7/24	0.64	14 (26.7)	25 (11.1)
7/25	0.00	13 (30.8)	23 (17.2)
7/26	0.00	13 (30.8)	22 (21.4)
7/27	0.00	13 (30.8)	21 (26.2)
7/28	0.00	12 (35.8)	20 (31.6)
7/29	0.00	12 (35.8)	20 (31.6)
8/8	0.00	10 (43.6)	19 (37.2)

Sampling Date	Precipitation at Barnstable Airport (in)	Flow in cfs (Percent Exceeded)	
		01105880 Herring River at North Harwich, MA	011058837 Quashnet River at Waquoit Village, MA
8/9	0.00	9.3 (46.9)	18 (43.6)
8/10	0.00	8.9 (49.5)	18 (43.6)
8/11	0.00	8.9 (49.5)	18 (43.6)
8/12	0.00	8.6 (51.2)	18 (43.6)
8/13	0.25	8.6 (51.2)	18 (43.6)
8/15	0.00	8.3 (52.8)	18 (43.6)
8/16	0.00	7.9 (55.4)	18 (43.6)
8/17	0.00	7.7 (56.8)	17 (49.6)
8/18	0.00	7.4 (59.1)	17 (49.6)
8/19	0.00	7.0 (62.8)	17 (49.6)
8/20	0.00	6.9 (63.3)	17 (49.6)
8/23	0.32	6.7 (65.2)	18 (43.6)
8/24	0.00	6.5 (66.6)	17 (49.6)
8/25	0.00	6.4 (67.1)	17 (49.6)
8/26	0.00	6.1 (69.7)	17 (49.6)
8/27	0.00	5.8 (71.8)	16 (55.7)
8/28	0.14	5.5 (73.6)	16 (55.7)
8/29	3.8	9.6 (45.6)	26 (9.2)
8/30	0.07	11 (40.6)	30 (3.3)
8/31	0.00	10 (43.6)	26 (9.2)
9/1	0.00	9.6 (45.6)	23 (17.2)
9/2	0.00	8.9 (49.5)	22 (21.4)
9/3	0.00	8.2 (53.4)	21 (26.2)
9/4	0.00	7.8 (56.4)	21 (26.2)
9/5	0.01	7.5 (58.3)	20 (31.6)
9/6	0.00	7.0 (62.8)	20 (31.6)
9/7	0.00	6.4 (67.1)	19 (37.2)
9/8	0.00	6.2 (69.2)	19 (37.2)
9/9	0.00	6.1 (69.7)	19 (37.2)
9/10	0.02	5.7 (72.5)	19 (37.2)
9/11	0.47	5.4 (74.0)	20 (31.6)
9/12	1.37	6.8 (63.9)	26 (9.2)
9/13	0.00	7.2 (61.0)	33 (1.6)
9/14	0.00	6.4 (67.1)	29 (4.3)
9/18	0.00	5.1 (75.5)	23 (17.2)
9/19	0.00	4.7 (78.3)	22 (21.4)
9/20	0.00	4.4 (80.6)	22 (21.4)

Sampling Date	Precipitation at Barnstable Airport (in)	Flow in cfs (Percent Exceeded)	
		01105880 Herring River at North Harwich, MA	011058837 Quashnet River at Waquoit Village, MA
9/21	0.00	4.4 (80.6)	22 (21.4)
9/22	0.00	4.3 (81.1)	22 (21.4)
9/23	0.00	3.1 (87.8)	23 (17.2)
9/24	0.00	2.3 (92.4)	22 (21.4)
9/25	0.00	2.5 (91.4)	22 (21.4)
9/26	0.00	2.3 (92.4)	21 (26.2)
9/27	1.55	3.6 (85.3)	23 (17.2)
9/28	0.00	5.1 (75.5)	26 (9.2)
9/29	0.18	5.0 (76.2)	25 (11.1)
9/30	0.00	4.6 (79.2)	23 (17.2)
10/1	0.00	3.9 (83.3)	23 (17.2)
10/2	0.00	3.3 (86.8)	23 (17.2)
10/3	1.87	4.9 (77.0)	28 (5.5)
10/4	0.00	5.7 (72.5)	30 (3.3)
10/5	0.00	5.4 (74)	27 (7.0)
10/6	0.00	4.1 (82.2)	25 (11.1)
10/7	0.29	4.0 (82.9)	25 (11.1)

Station Observations

Station observations were recorded on field sheets for each survey by a DWM investigator. Station observations are described below in Table 7 for each sampling event (MassDEP 2009c).

Table 7. 2009 Field observations from MassDEP DWM Cape Cod Watersheds water quality surveys.
S=sparse (0-25%, M=moderate (25-50%), D=dense (50-75%), VD=very dense (75-100%), N=none, U=unobservable, NR=not recorded) (MassDEP 2009c)

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W0739	7/29	N	Highly Turbid	Greenish	N					Yes	algal mat-algal bloom	Yes	algal bloom	
W0739	9/9	Musty (Basement)	Highly Turbid	Greenish	N					Yes	algal mat	Yes	flocculent mass - very major bloom going on. Impair.	Massive cyanobacteria bloom going on water is green/brown though not just green like last time.
W0739	9/30	N	Highly Turbid	Greenish	N					Yes	algal mat: cyanobacteria bloom, scum	Yes	flocculent mass: cyanobacteria bloom	massive cyanobacteria bloom in progress - scum at shores and well mixed greenish soup throughout lake, SCUFA reading: 55.489
W0744	7/30	NR	U	U	Sparse	U	U	U	U	Yes	oily sheens	NR		Gate to lake was open so water can pass back and forth between lake & cranberry bog.

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W0744	9/9	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									No flow from bog to pond but culvert was open to allow interchange
W0744	9/25	NR	NR	NR	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W0744	9/30	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									No sample taken. Pipe open to bog. No flow out.
W0745	9/9	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									No flow discernible from bog but major bloom & smell in area.
W0745	9/30	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									No flow observable from bog to pond. No pumping evident. No sample collected.
W0745	9/30	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									No sample collected. No flow observable from bog to pond. No pumping evident.
W0746	6/24	N	Slightly Turbid	Greenish	N					Yes	algal mat-very heavy algal bloom, chunks and scum at boat ramp, everywhere, approximately 12-15 meters at shore	Yes	flocculent mass: very heavy algal bloom along western shoreline	algal chunks from bloom floating by plus individual algal cells, etc.

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W0746	9/3	N	Slightly Turbid	Light Yellow/Tan	N					No		No		
W0746	9/30	N	Moderately Turbid	Greenish	N					No		No		SCUFA 122.876, sonde SN0714, logger SN00366
W0747	6/24	N	Clear	Clear	N					No		No		some algae clumps but not as bad as Walkers Pond approximately 2 hours ago
W0747	9/3	N	Slightly Turbid	Light Yellow/Tan	N					No		No		much clearer water than connected pond (Walkers with a Secchi disk of 0.8m)
W0747	9/30	N	Clear	Clear	N					No		No		
W0748	6/25	N	Clear	Clear	N					No		No		
W0748	9/2	N	Clear	Clear	N					No		No		
W0748	10/1	N	Clear	Clear	N					No		No		
W1214	7/29	N	Moderately Turbid	Greenish	N					Yes	cyanobacteria bloom- no scum but in water column	Yes	flocculent mass-algal bloom	
W1214	9/9	N	Moderately Turbid	Greenish	N					No		Yes	flocculent mass - algal bloom in progress, very clumped	

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1214	9/30	N	Highly Turbid	Greenish	N					Yes	algal mat, cyanobacteria bloom	Yes	flocculent mass, very large area of cyanobacteria, including mixing into 10.3 meter depth sample.	
W1218	7/29	NR	NR	NR	Not Applicable (N/A) - Lakes or Deploy Field Sheet									Gate structure keeps water from flowing from pond into bog approx 18". Bog has been fallow for several years based on 5' trees growing in bog.
W1218	9/9	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									no flow
W1218	9/30	NR	NR	NR	NR	NR	NR	NR	NR	NR		NR		bog is fallow 5+ years, no flow
W1234	6/25	N	Clear	Clear	N					No		No		
W1234	9/3	N	Clear	Clear	N					No		No		
W1234	10/1	N	Clear	Clear	N					No		No		
W1237	6/25	N	Clear	Clear	N					No	some bands of bluegreens yesterday on shore	No		
W1237	9/2	N	Clear	Greenish	N					No		No		
W1237	10/1	N	Slightly Turbid	Greenish flecks	N					No		No		
W1239	6/25	N	Clear	Light Yellow/Tan	Moderate	N	N	N	N	No		No		

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1239	10/1	Unobservable	U	U	U	NR	NR	NR	NR	U		U		Bog not being pumped up yet even though other bog in northwest part of pond.
W1277	6/24	Musty (Basement)	Clear	Reddish	Sparse	M	NR	NR	M	No		No		Reddish water plume into pond. Water slow but obviously flowing. Access up pour point on foot.
W1277	9/3	N	Clear	Reddish	NR	NR	S	NR	NR	No		No		Took Sonde readings. Temp 14.17, pH 5.25, DO 1.95. Very cold - ground water
W1277	9/30	N	Clear	Reddish	Sparse	S	NR	NR	S	No		No		
W1905	5/19	N	Clear	Clear	Moderate	N	N	N	N	No		No		
W1905	6/18	Musty (Basement)	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1905	6/19	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1905	6/23	N	Clear	Clear	Moderate	N	N	N	N	No		No		
W1905	7/24	N	Clear	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1905	7/28	N	Clear	Clear	Moderate	N	N	N	N	Yes	foam on edges	No		water is cold
W1905	8/13	N	Clear	Clear	Dense	N	N	N	N	No		No		
W1905	8/20	N	Clear	Clear	Very Dense	N	N	N	N	No		No		
W1905	8/28	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1905	9/1	N	Clear	Clear	Moderate	N	N	N	N	No		Yes	trash, minimal along bank	
W1905	9/10	N	Clear	Clear	Dense	N	N	N	N	No		No		
W1905	10/1	N	Clear	Clear	Moderate	N	N	N	N	No		No		
W1905	10/6	N	Clear	Clear	Dense	N	N	N	N	No		No		
W1906	5/19	N	Clear	Clear	N	N	N	N	N	No		No		
W1906	6/19	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1906	6/23	Musty (Basement) slight	Slightly Turbid	Greyish from runoff	N	N	N	N	N	No		Yes	trash	
W1906	7/24	Musty (Basement)	Slightly Turbid	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1906	7/28	salty	Clear	Clear	N	NR	D	NR	NR	No		No		took plant samples, note take upstream road but downstream stormwater outfall on left bank, unattended probe deployed just opposite outfall
W1906	8/13	Musty (Basement)	Clear	Light Yellow/Tan	N	NR	M	NR	NR	No		No		
W1906	8/20	N	Clear	Light Yellow/Tan	Sparse	NR	M	NR	NR	No		No		
W1906	8/28	Musty (Basement)	Clear	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1906	9/1	N	Clear	Clear	N	NR	M	NR	NR	No		Yes	trash slight	

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1906	9/10	N	Slightly Turbid	Light Yellow/Tan	N	N	N	N	N	No		Yes	trash light	Tide pushing water back so water level is higher. However, stream still flowing down and water is FRESH.
W1906	10/5	Musty (Basement)	Slightly Turbid	Clear	N	NR	S	NR	NR	No		No		
W1906	10/6	N	Slightly Turbid	Light Yellow/Tan	Sparse	NR	S	NR	NR	No		Yes	trash - light	
W1907	5/19	wood pulp	Clear	Clear	Sparse	N	N	N	N	No		No		
W1907	6/23	Musty (Basement) slight	Slightly Turbid	Brownish light	Moderate	M	NR	NR	NR	No		No		
W1907	7/28	N	Clear	Clear	Very Dense	N	S	N	S	No		Yes	other: hose, assorted trash (minor)	
W1907	8/13	N	Clear	Light Yellow/Tan	Dense	N	N	N	N	No		No		
W1907	8/20	N	Clear	Clear	Dense	N	N	N	N	No		No		
W1907	9/1	N	Clear	Clear	Dense	N	N	N	N	No		No		
W1907	9/10	N	Clear	Light Yellow/Tan	Sparse	N	N	N	N	No		Yes	trash light	
W1907	10/5	N	Clear	Light Yellow/Tan	Sparse	N	N	N	N	No		Yes	trash: light	disc filter clogged after 1-2 draws (clear water!)
W1907	10/6	Sulfide (rotten egg)	Clear	Light Yellow/Tan	NR	N	N	N	N	No		Yes	trash - light	

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1908	5/19	N	Clear	Clear	Moderate	NR	M	NR	NR	No		No		
W1908	6/23	N	Clear	Clear	Sparse		NR	NR	NR	No		No		
W1908	7/28	N	Clear	Clear	Dense	NR	S	NR	NR	No		No		note basically sampling between 2 ponds choked with weeds
W1908	8/13	N	Clear	Clear	Very Dense	N	N	N	N	No		No		
W1908	8/20	N	Clear	Clear	Very Dense	N	N	N	N	No		No		
W1908	9/1	N	Clear	Clear	Very Dense	N	N	N	N	No		Yes	trash minimal	
W1908	9/10	N	Slightly Turbid	Light Yellow/Tan	Moderate	U	U	U	U	No		Yes	trash light	Geese upstream approximately 15 birds may be cause of cloudiness.
W1908	10/5	N	Slightly Turbid	Light Yellow/Tan	Very Dense	NR	M	NR	NR	No		Yes	trash - light	
W1908	10/6	N	Clear	Light Yellow/Tan	Very Dense	N	N	N	N	No		Yes	trash - light	
W1909	5/19	N	Slightly Turbid	Clear	Sparse	NR	NR	NR	S	No		No		
W1909	6/18	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1909	6/23	N	Slightly Turbid	Brownish	Moderate	M	NR	NR	NR	No		No		
W1909	7/28	N	Slightly Turbid	Light Yellow/Tan	Moderate	S	M	NR	S	No		No		
W1909	8/13	N	Slightly Turbid	Light Yellow/Tan	Dense	NR	NR	NR	S	No		No		

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1909	8/20	N	Clear	Clear	Dense	NR	S	NR	M	No		No		
W1909	9/1	N	Clear	Reddish	Dense	NR	M	NR	M	No		No		good flow here
W1909	9/10	N	Clear	Light Yellow/Tan	Moderate	NR	M	NR	NR	No		Yes	trash light	
W1909	10/5	N	Slightly Turbid	Light Yellow/Tan	Moderate	NR	S	NR	NR	No		Yes	trash: slight	
W1909	10/6	N	Slightly Turbid	Light Yellow/Tan	Dense	NR	NR	NR	NR	No		No		
W1910	5/19	N	Clear	Clear	Sparse	S	NR	NR	NR	No		Yes	trash: minimal	
W1910	6/19	N	Clear	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1910	6/23	N	Clear	Brownish	Sparse	S	NR	NR	NR	No		No		
W1910	7/24	N	Slightly Turbid	Reddish	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1910	7/28	N	Clear	Clear	Sparse	S	NR	NR	NR	Yes	foam natural	Yes	trash shopping cart, bike	
W1910	8/13	N	Clear	Clear	Very Dense	S	S	NR	NR	No		Yes	trash, bike, shopping cart	
W1910	8/28	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1910	9/1	N	Clear	Reddish	Sparse	N	N	N	M	No		Yes	trash, bicycle, shopping cart	strong flow in constricted channel
W1910	10/6	N	Clear	Light Yellow/Tan	NR	N	N	N	N	No		No		
W1911	5/19	N	Clear	Clear	N	N	N	N	N	No		No		
W1911	6/18	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1911	6/19	Musty (Basement)	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1911	6/23	N	Slightly Turbid	Brownish	Sparse	NR	NR	NR	S	No		No		
W1911	7/24	N	Slightly Turbid	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1911	7/28	N	Clear	Clear	Sparse	NR	NR	NR	S	No		No		
W1911	8/13	N	Clear	Clear	Moderate	S	S	NR	S	No		No		
W1911	8/28	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1911	9/1	N	Slightly Turbid	Light Yellow/Tan	Moderate	N	N	N	N	No		No		
W1911	10/6	N	Clear	Clear	Sparse	S	NR	S	NR	No		No		
W1912	5/19	N	Clear	Clear	N	S	NR	NR	NR	No		No		
W1912	6/18	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1912	6/19	N	Slightly Turbid	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1912	6/23	N	Slightly Turbid	Brownish	Moderate	S	NR	NR	NR	No		No		lots of small fish (herring?)
W1912	7/24	N	Moderately Turbid	Brownish	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1912	7/28	N	Slightly Turbid	Clear	Moderate	S	NR	NR	NR	No		No		water has somewhat chalky turbidity, lots of coarse particulate organic matter, took algae sample
W1912	8/13	Musty (Basement)	Moderately Turbid	Light Yellow/Tan	Dense	U	U	U	U	Yes	algal mat - green	No		serious algal bloom - green
W1912	8/28	manure	Slightly Turbid	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1912	9/1	N	Highly Turbid	Greenish	Moderate	U	U	U	U	No		No		green cyanobacteria bloom here
W1912	10/6	pond	Highly Turbid	Greenish	Moderate	U	U	U	U	Yes	foam	No		
W1913	5/19	N	Clear	Light Yellow/Tan	N	N	N	N	N	No		No		
W1913	6/23	N	Slightly Turbid	Light Yellow/Tan	N	N	N	N	N	No		No		
W1913	7/28	N	Slightly Turbid	Light Yellow/Tan	N	N	N	N	N	Yes	foam from culvert	No		
W1913	8/13	N	Slightly Turbid	Clear	Sparse	NR	S	NR	NR	No		No		10 inch height difference between surface and culvert coming out under road.
W1913	9/1	N	Clear	Light Yellow/Tan	N	N	N	N	S	No		No		pipe under road comes out higher than water level, perched pipe
W1913	10/6	N	Clear	Light Yellow/Tan	N	U	U	U	U	No		No		Culvert too high - needs modification for herring (call Riverways).
W1914	5/19	Musty (Basement)	Clear	Clear	Sparse	S	NR	NR	NR	No		No		
W1914	6/23	N	Clear	Clear	Sparse	N	N	N	N	No		No		
W1914	7/28	N	Clear	Clear	Sparse	NR	M	NR	NR	No		No		
W1914	8/13	N	Clear	Light Yellow/Tan	Moderate	NR	S	NR	NR	No		No		

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1914	9/1	N	Clear	Light Yellow/Tan	Sparse	N	N	N	N	No		Yes	trash minimal	
W1914	10/6	Musty (Basement)	Clear	Clear	NR	NR	NR	S	NR	No		Yes	trash - by road	
W1915	5/19	N	Clear	Clear	Sparse	NR	D	NR	NR	No		No		
W1915	6/19	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1915	6/23	Sulfide (rotten egg)	Slightly Turbid	Clear	Sparse	U	U	U	U	No		No		
W1915	7/24	Unobservable	U	Reddish	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1915	7/28	N	Clear	Clear	Moderate	M	NR	NR	NR	No		No		
W1915	8/13	N	Slightly Turbid	Light Yellow/Tan	Dense	N	N	N	N	No		No		
W1915	8/20	N	Clear	Clear	Sparse	NR	NR	D	NR	No		Yes	orange floc	
W1915	8/28	Unobservable	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1915	9/1	N	Clear	Clear	Sparse	U	U	U	U	No		No		
W1915	9/10	N	Slightly Turbid	Light Yellow/Tan	Sparse	U	U	U	U	No		Yes	orange floc	
W1915	9/10	N	Clear	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1915	10/5	N	Clear	Light Yellow/Tan	Moderate	U	U	U	U	No		No		Much less colored than downstream site. This only took 1 filter to get sample verses 4 at downstream and tributary sites.

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1915	10/6	NR	Clear	Dark Tan	Moderate	U	U	U	U	No		No		
W1916	5/19	Musty (Basement)	Clear	Light Yellow/Tan	Sparse	M	NR	NR	NR	No		No		
W1916	6/19	N	Clear	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1916	6/23	Sulfide (rotten egg)	Moderately Turbid	Light Yellow/Tan	Moderate	U	U	U	U	No		No		
W1916	7/24	Unobservable	U	Reddish	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1916	7/28	N	Clear	Brownish	Sparse	U	U	U	U	Yes	oily sheens, small amount in eddy, plate like	U		
W1916	8/13	N	Moderately Turbid	Brownish	Dense	U	U	U	U	No		No		
W1916	8/20	N	Clear	Clear	Dense	U	U	U	U	No		No		dock, right bank
W1916	8/28	Unobservable	Slightly Turbid	Brownish	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1916	9/1	N	Slightly Turbid	Light Yellow/Tan	Moderate	U	U	U	U	No		No		
W1916	9/10	Musty (Basement)	Slightly Turbid	Light Yellow/Tan	Moderate	U	U	U	U	No		No		
W1916	9/10	Musty (Basement)	Slightly Turbid	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1916	10/5	N	Slightly Turbid	Light Yellow/Tan	Dense	U	U	U	U	Yes	pollen/dust blankets	No		
W1916	10/6	N	Slightly Turbid	Brownish	Moderate	U	U	U	U	No		No		Lay on belly to collect side by side samples by reaching down. Some orange/silty water coming in above sample from small tributary.
W1917	5/19	Musty (Basement)	Clear	Light Yellow/Tan	Sparse	NR	NR	NR	S	No		Yes	trash: light	
W1917	6/23	Sulfide (rotten egg)	Moderately Turbid	Brownish	N	NR	NR	S	NR	No		No		
W1917	7/28	N	Clear	Brownish	Sparse	U	U	U	U	No		No		
W1917	8/13	N	Clear	Light Yellow/Tan	N	N	N	N	N	No		No		
W1917	8/20	N	Clear	Light Yellow/Tan	N	U	U	U	U	No		No		
W1917	9/1	N	Slightly Turbid	Brownish	Sparse	U	U	U	U	No		No		
W1917	9/10	Musty (Basement)	Clear	Light Yellow/Tan	NR	U	U	U	U	No		Yes	trash; light	

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1917	10/5	N	Slightly Turbid	Reddish	N	U	U	U	U	No		No		Water looks low in turbidity, but clogged 4 filters before getting enough for a sample. That is way more than last time. No obvious reason for change.
W1917	10/6	N	Clear	Rusty	N	U	U	U	U	No		No		
W1918	5/19	N	Clear	Clear	Moderate	N	N	N	S	No		Yes	trash: slight	
W1918	6/23	N	Slightly Turbid	Clear	Dense	N	N	N	N	No		No		
W1918	7/28	N	Clear	Clear	Very Dense	N	N	N	N	No		No		
W1918	8/13	N	Slightly Turbid	Clear	Dense	N	N	N	N	No		No		
W1918	9/1	N	Clear	Clear	Moderate	N	N	N	N	No		No		
W1918	10/6	N	Clear	Light Yellow/Tan	Sparse	N	N	N	N	No		No		
W1919	5/19	N	Clear	Clear	N	NR	NR	NR	S	Yes	scum in front of culvert	Yes	trash	
W1919	6/23	Musty (Basement)	Highly Turbid	Light Yellow/Tan	N	U	U	U	U	Yes	foam (minimal), other: brown trash, dead wood	Yes	trash	
W1919	7/28	N	Clear	Light Yellow/Tan	N	N	N	N	N	Yes	scum heavy at blocked culvert	No		

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1919	8/13	N	Moderately Turbid	Brownish	N	N	N	N	N	Yes	plant debris	Yes	trash	
W1919	9/1	N	Slightly Turbid	Light Yellow/Tan	N	N	N	N	N	Yes	brown scum minimal	Yes	trash light	
W1919	10/6	N	Slightly Turbid	Dark Tan	N	N	N	N	N	No		No		
W1920	5/19	N	Slightly Turbid	Clear	Sparse	NR	NR	NR	M	No		Yes	light trash	
W1920	6/19	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1920	6/23	N	Clear	Clear	Sparse	NR	NR	S	NR	No		No		
W1920	7/24	N	Slightly Turbid	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1920	7/28	N	Clear	Clear	Moderate	N	N	N	N	No		No		
W1920	8/13	N	Clear	Light Yellow/Tan	Dense	N	N	N	N	No		No		
W1920	8/28	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1920	9/1	N	Clear	Clear	Moderate	N	N	N	N	No		Yes	trash light	
W1920	10/6	Rotting Vegetables	Clear	Light Yellow/Tan	Sparse	N	N	N	N	No		No		
W1921	5/19	N	Clear	Light Yellow/Tan	N	N	N	N	N	No		No		
W1921	6/23	N	Slightly Turbid	Brownish	N	N	N	N	N	No		No		

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1921	7/28	N	Clear	Light Yellow/Tan	N	N	N	N	N	No		No		sampled where stream flows under middle of white posts upstream side
W1921	8/13	Musty (Basement)	Moderately Turbid	Brownish	N	N	N	N	N	No		No		
W1921	9/1	N	Clear	Brownish	N	N	N	N	N	No		No		
W1921	10/6	N	Clear	Light Yellow/Tan	N	N	N	N	N	No		No		
W1922	6/19	Sulfide (rotten egg)	Clear	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1922	7/24	tide	Moderately Turbid	Brownish	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1922	8/28	ocean	Clear	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1923	5/19	NR	Clear	Light Yellow/Tan	Sparse	N	N	N	N	No		Yes	orange floc: minimal	
W1923	6/23	Musty (Basement) slight	Slightly Turbid	Brownish	N	N	N	N	N	No		No		upstream of small drainage swale-flowing with road runoff, sulfide smell
W1923	7/28	N	Clear	Brownish	N	N	N	N	N	Yes	oily sheens, other - iron bacteria	No		
W1923	8/13	N	Moderately Turbid	Light Yellow/Tan	Sparse	NR	NR	D	NR	No		Yes	orange floc	

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1923	9/1	Musty (Basement)	Slightly Turbid	Brownish	N	NR	NR	D	S	Yes	pollen/dust blankets: slight	No		low flow
W1923	10/6	Sulfide (rotten egg)	Clear	Light Yellow/Tan	N	U	U	U	U	No		Yes	orange floc, side channel, upstream of road.	
W1924	5/19	N	Clear	Light Yellow/Tan	N	N	N	N	N	No		No		
W1924	6/19	N	Clear	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1924	6/23	N	Slightly Turbid	Brownish	N	N	N	N	N	No		No		water very colored
W1924	7/24	N	Slightly Turbid	Brownish	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1924	7/28	N	Clear	Brownish	N	N	N	N	N	No		No		
W1924	8/13	N	Slightly Turbid	Light Yellow/Tan	N	N	N	N	N	No		No		
W1924	8/28	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									not deployed, insufficient water to cover probe adequately, no probe deployed, attended only (on side) about 2 inch depth (probe submerged)
W1924	9/1	N	Clear	Reddish	N	NR	NR	M	NR	No		No		
W1924	10/6	Musty (Basement)	Clear	Reddish	N	U	U	U	U	No		No		

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1925	5/19	N	Clear	Clear	N	S	NR	NR	NR	No		Yes	trash: instream and riparian, impair aesthetics	
W1925	6/23	N	Clear	Clear	Sparse	S	NR	NR	NR	No		Yes	trash: chair, shovel, junk	
W1925	7/28	N	Clear	Clear	N	N	N	N	N	No		Yes	trash, in stream trash	
W1925	8/13	N	Clear	Clear	Sparse	N	N	N	N	No		Yes	trash - heavy trash	
W1925	9/1	N	Clear	Clear	Sparse	NR	NR	NR	S	No		Yes	trash: tons on bank and some in stream, enough to impair aesthetics right in this area	
W1925	10/6	N	Clear	Light Yellow/Tan	Sparse	N	N	N	N	No		Yes	trash - heavy at site. Almost none upstream.	
W1926	5/19	N	Clear	Clear	Sparse	M	NR	NR	NR	No		No		
W1926	6/23	Rotting Vegetables	Clear	Clear	Sparse	NR	NR	NR	S	No		No		
W1926	7/28	N	Clear	Clear	Sparse	NR		NR	S	No		No		
W1926	8/13	N	Clear	Clear	N	N	N	N	N	No		No		sponges!

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1926	9/1	N	Clear	Light Yellow/Tan	N	N	N	N	N	No		No		sponge - like plant growing attached to rocks, brown to whiteish in color some attached to root masses, observational information representative of fish ladder, water quality representative of lake outlet
W1926	10/6	N	Slightly Turbid	Light Yellow/Tan	N	N	N	N	N	No		No		Bryophytes-bryozoan colonies (gray in color) covered about 70% of substrate in fishway/stream.
W1927	5/19	N	Slightly Turbid	Greenish	NR	N	N	N	N	Yes	algal mat (major algal bloom)	No		major green algal bloom
W1927	6/23	N	Clear	Clear	Sparse	U	U	U	U	No		No		
W1927	7/28	N	Clear	Clear	Sparse					No		No		
W1927	8/13	N	Clear	Clear	N					No		No		
W1927	9/1	N	Clear	Clear	Sparse					No		No		
W1927	10/6	N	Clear	Light Yellow/Tan	Sparse					Yes	foam: natural foam	No		
W1928	5/19	N	Slightly Turbid	Clear	NR	NR	NR	M	NR	No		Yes	trash: slight	
W1928	6/23	Musty (Basement)	Slightly Turbid	Clear	U	U	U	U	U	No		No		

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1928	7/28	N	Clear	Clear	N					Yes	minor scum behind flashboard	No		
W1928	8/13	N	Slightly Turbid	Greenish	N					No		No		
W1928	9/1	N	Clear	Light Yellow/Tan	Moderate					No		No		
W1928	10/6	N	Clear	Light Yellow/Tan	Moderate					No		No		
W1929	5/19	N	Clear	Clear	N	N	N	N	N	No		No		
W1929	6/23	N	Clear	Clear	U	U	U	U	U	Yes	foam	No		
W1929	7/28	N	Clear	Clear	N					No		No		
W1929	8/13	N	Clear	Clear	N					No		No		
W1929	9/1	N	Slightly Turbid	Clear	N					No		No		
W1929	10/6	N	Slightly Turbid	Light Yellow/Tan	N					Yes	foam: some natural foam	No		
W1930	5/19	N	Slightly Turbid	Greenish	N	N	N	N	N	Yes	algal mat: blue green bloom, moderate (sample taken)	No		phytobloom going on (windward side)
W1930	6/23	N	Slightly Turbid	Clear	U	U	U	U	U	No		No		
W1930	7/28	N	Moderately Turbid	Greenish	N					No		No		

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1930	8/13	NR	Moderately Turbid	Brownish	N					Yes	foam	No		
W1930	9/1	N	Slightly Turbid	Light Yellow/Tan	Sparse					Yes	foam minimal	Yes	trash light	
W1930	9/3	N	Slightly Turbid	Light Yellow/Tan	N					No		Yes	trash light	
W1930	10/6	NR	Highly Turbid	Brownish	Sparse					No		Yes	turbidity and extent of algal cloud	
W1980	5/19	N	Clear	Clear	U	N	N	N	N	No		U		
W1980	6/23	Musty (Basement)	Clear	Clear	N	NR	NR	NR	S	No		No		sample was taken at outlet but observational information more representative of the channel downstream, water quality data is representative of the lake outlet
W1980	7/28	N	Clear	Clear	Moderate					No		No		
W1980	8/13	N	Clear	Clear	Dense					No		No		
W1980	9/1	N	Clear	Clear	Moderate					No		No		
W1980	10/6	N	Clear	Light Yellow/Tan	Moderate					No		No		
W1981	5/19	N	Clear	Clear	N	U	U	U	U	No		No		

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1981	6/23	N	Slightly Turbid	Clear	N	N	N	N	N	No		No		samples taken by wading to about 3 feet deep at beach, very windy, 1foot waves on shore
W1981	7/28	N	Clear	Clear	N					No		No		
W1981	8/13	N	Slightly Turbid	Greenish	NR					No		No		Minor cyanobacteria bloom, - can see in water but not dense at all.
W1981	9/1	N	Clear	Clear	Sparse					No		No		
W1981	10/6	N	Clear	Clear	N					No		No		
W1981	10/7	N	Clear	Clear	N					No		No		
W1982	5/19	N	Clear	Clear	N	U	U	U	U	No		No		lake appears to have an aeration system
W1982	6/23	N	Clear	Clear	N	N	N	N	N	No		No		samples taken wading out from shore to about 2-3ft deep
W1982	7/28	N	Highly Turbid	Greenish	N					Yes	algal mat	Yes	other: algae bloom 1.3 million cell count- closure	
W1982	7/29	N	Moderately Turbid	Greenish	N					Yes	blue green algal mat extends greater than 3 meters	Yes	other: algal mat	

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1982	8/13	N	Highly Turbid	Greenish	NR					Yes	algal mat, foam, major cyanobacteria bloom in progress - chunky	No		major cyanobacteria bloom - green!, SCUFA reading between 190 and 350 for lake, but reading 230 to 250 for homogenized bottle sample, sonde SN0714, logger SN00366
W1982	9/1	N	Slightly Turbid	Greenish	N					No		No		
W1982	9/9	N	Moderately Turbid	Greenish	N					Yes	algal mat	Yes	algal bloom throughout water column, and whole pond wind mixed	
W1982	9/30	N	Highly Turbid	Greenish	N					Yes	algal mat: cyanobacteria bloom	NR		
W1982	10/6	N	Moderately Turbid	Greenish	N					Yes	algal mat - bloom	Yes	flocculent mass - cyanobacteria bloom	
W1983	5/19	N	Slightly Turbid	Clear	N	U	U	U	U	No		No		sample grabbed at boat launch

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1983	6/23	N	Slightly Turbid	Light Yellow/Tan	N	NR	NR	M	NR	No		No		samples taken off pond shore at about 2 foot depth, photo at boat ramp tried to show algae bloom very green in water, also took sample for phytoplankton ID-lots suspended in water column
W1983	7/28	N	Highly Turbid	Greenish	N					Yes	algal mat	Yes	other: algae bloom (lake is closed by health department)	algae quite dense, wind blowing onto shore at boat launch
W1983	7/29	N	Moderately Turbid	Greenish	NR					Yes	algal mat-cyanobacteria	Yes	trash: light	sample 96-0573 with file name W1983:
W1983	8/13	N	Highly Turbid	Greenish	NR					Yes	algal mat - massive cyanobacteria bloom in progress	No		major cyanobacteria bloom in progress - green!
W1983	9/1	N	Highly Turbid	Greenish	N					Yes	foam	No		
W1983	10/6	N	Highly Turbid	Greenish	N					Yes	cyanobacteria	Yes	massive cyanobacteria bloom	
W1984	9/2	N	Clear	Clear	N					No		No		
W1984	9/23	N	Clear	Clear	N					No		No		Very clear water, but distinct thermocline at 10.5 m.

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W1985	7/29	N	Clear	Light Yellow/Tan	N	N	N	N	N	No		No		
W1985	9/9	Sulfide (rotten egg)	Clear	Clear	N	N	N	N	N	No		No		
W1985	9/30	N	Clear	Light Yellow/Tan	N	N	N	N	N	No		No		Upstream bog not flooded. Likely fallow for several years. Groundwater flow likely.
W1986	7/29	N	Clear	Light Yellow/Tan	Sparse	N	N	N	N	Yes	oily sheens; sheen natural	No		
W1986	9/9	Sulfide (rotten egg)	Slightly Turbid	Clear	N	NR	NR	NR	NR	Yes	oily sheens	No		Duckweed on surface in clumps. Stagnant so no sample collected.
W1986	9/30	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									No flow from this tributary. (Wet but not flowing.)
W1987	9/3	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1987	9/30	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									no flow and no evidence of flow
W1988	9/3	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W1988	9/30	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									no flow, no evidence of flow
W2071	6/18	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2072	6/18	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2073	6/18	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2074	6/18	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W2075	6/18	N	Slightly Turbid	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2076	6/19	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2077	6/18	NR	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2078	6/18	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2079	6/18	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2080	6/19	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2082	6/18	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2084	6/18	Sulfide (rotten egg)	Slightly Turbid	Light Yellow/Tan	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2085	6/18	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2086	6/18	NR	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2087	6/18	N	Clear	Clear	Not Applicable (N/A) - Lakes or Deploy Field Sheet									
W2116	9/14	N	Clear	Clear	N					No		No		found fish dead and some mussels, no apparent algal bloom
W2117	9/14	N	Slightly Turbid	Light Yellow/Tan	N					No		No		no apparent algal bloom
W2122	9/2	N	Clear	Clear	NR	NR	NR	NR	NR	Yes	algal mat; floating clumps of cyanobacteria pretty light though	No		
W2123	7/29	N	Clear	Light Yellow/Tan	U	U	U	U	U	No		Yes	trash light	sample taken as water flows over small weir inside abandoned pump house.

Unique ID	Date	Odor	Water Clarity	Color	Aquatic Plants	Filamentous Algae	Film Algae	Loose Floc	Moss	Floating Scum	Floating Scum Comments	Objectionable Deposits	Objectionable Deposit Comments	Fieldsheet Comments
W2123	9/9	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									no flow, by pump house
W2123	9/30	Unobservable	U	U	Not Applicable (N/A) - Lakes or Deploy Field Sheet									Bog is fallow 5+ years. No Flow. By pump house
W2124	6/25	N	Slightly Turbid	Greenish	Sparse	U	U	U	U	Yes	algal mat: (on pond)	Yes	not flowing	Not flowing at time of visit. Samplable from water though.
W2124	9/2	NR	NR	NR	NR	NR	NR	NR	NR	NR		NR		not flowing
W2124	10/1	N	Clear	Clear	NR	U	U	U	U	Yes	organic debris behind control structure	Yes	trash - light	Intake pipe is under water. Pumping into bog is ongoing. Sample collected as water leaked from stop logs at control structure (before reaching lake).
W2125	6/25	NR	NR	NR	NR					NR		NR		lake sample copied from river/stream fieldsheet 09-D006-05
W2126	7/29	NR	NR	NR	NR					NR		NR		

Water Quality Data

All MassDEP DWM water quality data are managed and maintained in the Water Quality Data Access Database (WQD). Tables 8 – 13 below provide the 2009 Cape Cod Watersheds water quality data. Table 8 provides analytical data for all river and lake water quality sampling sites. Table 9 summarizes the number and geometric mean of *E. coli* samples collected at water quality sites. Table 10 presents Secchi disk depths from Cape Cod lakes. Table 11 provides attended multiprobe data. Table 12 summarizes dissolved oxygen data collected using unattended multiprobes. Finally, Table 13 summarizes temperature data collected using unattended multiprobes and thermistors. The procedures used to accept, accept with qualification, or censor data are based on the DWM Standard Operating Procedures (SOP) for data validation and usability (MassDEP 2012a), and are in addition to separate quality assurance activities and laboratory validation steps undertaken by WES. Definitions for the data qualifiers are provided in Appendix 1.

Table 8. 2009 MassDEP DWM Cape Cod Watersheds water quality data for river stations.

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1905	96-0016	5/19	9:31		Total Nitrogen	0.41	mg/L	
S	W1905	96-0079	6/23	9:36		Total Nitrogen	0.47	mg/L	
S	W1905	96-0286	7/28	9:26		Total Nitrogen	0.44	mg/L	
S	W1905	96-0489	9/1	9:23		Total Nitrogen	0.43	mg/L	
S	W1905	96-0538	10/6	9:53		Total Nitrogen	0.37	mg/L	
S	W1905	96-0016	5/19	9:31		Ammonia-N	<0.02	mg/L	
S	W1905	96-0079	6/23	9:36		Ammonia-N	0.04	mg/L	
S	W1905	96-0286	7/28	9:26		Ammonia-N	0.02	mg/L	
S	W1905	96-0489	9/1	9:23		Ammonia-N	<0.02	mg/L	
S	W1905	96-0538	10/6	9:53		Ammonia-N	<0.02	mg/L	
S	W1905	96-0016	5/19	9:31		Total Phosphorus	0.021	mg/L	
S	W1905	96-0079	6/23	9:36		Total Phosphorus	0.027	mg/L	
S	W1905	96-0286	7/28	9:26		Total Phosphorus	0.034	mg/L	
S	W1905	96-0489	9/1	9:23		Total Phosphorus	0.022	mg/L	
S	W1905	96-0538	10/6	9:53		Total Phosphorus	0.021	mg/L	
S	W1905	96-0016	5/19	9:31		*E. coli*	100	CFU/100mL	
S	W1905	96-0079	6/23	9:36		*E. coli*	190	CFU/100mL	
S	W1905	96-0286	7/28	9:26		*E. coli*	10	CFU/100mL	
S	W1905	96-0416	8/13	9:36		*E. coli*	640	CFU/100mL	
S	W1905	96-0489	9/1	9:23		*E. coli*	20	CFU/100mL	
S	W1905	96-0538	10/6	9:53		*E. coli*	54	CFU/100mL	
S	W1905	96-0016	5/19	9:31		True Color	<15	PCU	
S	W1905	96-0079	6/23	9:36		True Color	19	PCU	
S	W1905	96-0286	7/28	9:26		True Color	23	PCU	
S	W1905	96-0489	9/1	9:23		True Color	<15	PCU	
S	W1905	96-0538	10/6	9:53		True Color	18	PCU	
S	W1905	96-0016	5/19	9:31		Turbidity	0.9	NTU	
S	W1905	96-0079	6/23	9:36		Turbidity	1.5	NTU	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1905	96-0286	7/28	9:26		Turbidity	1.1	NTU	
S	W1905	96-0489	9/1	9:23		Turbidity	1.0	NTU	b
S	W1905	96-0538	10/6	9:53		Turbidity	1.0	NTU	
S	W1905	96-0079	6/23	9:36		Hardness	<20	mg/L	
S	W1905	96-0286	7/28	9:26		Hardness	<20	mg/L	
S	W1905	96-0443	8/20	13:52		Hardness	17	mg/L as CaCO3	
S	W1905	96-0522	9/10	14:50		Hardness	17	mg/L as CaCO3	
S	W1905	96-0565	10/5	9:36		Hardness	16	mg/L as CaCO3	
S	W1905	96-0443	8/20	13:52		Aluminum - Dissolved	<40	µg/L	
S	W1905	96-0522	9/10	14:50		Aluminum - Dissolved	<50	µg/L	
S	W1905	96-0565	10/5	9:36		Aluminum - Dissolved	<50	µg/L	
S	W1905	96-0443	8/20	13:52		Antimony - Dissolved	<0.15	µg/L	
S	W1905	96-0522	9/10	14:50		Antimony - Dissolved	<0.15	µg/L	
S	W1905	96-0565	10/5	9:36		Antimony - Dissolved	<0.15	µg/L	
S	W1905	96-0443	8/20	13:52		Arsenic - Dissolved	<0.51	µg/L	
S	W1905	96-0522	9/10	14:50		Arsenic - Dissolved	<1.0	µg/L	
S	W1905	96-0565	10/5	9:36		Arsenic - Dissolved	<1.0	µg/L	
S	W1905	96-0443	8/20	13:52		Beryllium - Dissolved	<0.20	µg/L	j
S	W1905	96-0522	9/10	14:50		Beryllium - Dissolved	<0.20	µg/L	
S	W1905	96-0565	10/5	9:36		Beryllium - Dissolved	<0.20	µg/L	
S	W1905	96-0443	8/20	13:52		Cadmium - Dissolved	<0.13	µg/L	
S	W1905	96-0522	9/10	14:50		Cadmium - Dissolved	<0.13	µg/L	
S	W1905	96-0565	10/5	9:36		Cadmium - Dissolved	<0.13	µg/L	
S	W1905	96-0443	8/20	13:52		Calcium - Dissolved	3.5	mg/L	
S	W1905	96-0522	9/10	14:50		Calcium - Dissolved	3.4	mg/L	
S	W1905	96-0565	10/5	9:36		Calcium - Dissolved	3.4	mg/L	
S	W1905	96-0443	8/20	13:52		Chromium - Dissolved	<0.22	µg/L	
S	W1905	96-0522	9/10	14:50		Chromium - Dissolved	<0.22	µg/L	
S	W1905	96-0565	10/5	9:36		Chromium - Dissolved	<0.22	µg/L	
S	W1905	96-0443	8/20	13:52		Copper - Dissolved	0.77	µg/L	d, j
S	W1905	96-0522	9/10	14:50		Copper - Dissolved	<0.53	µg/L	d
S	W1905	96-0565	10/5	9:36		Copper - Dissolved	1.0	µg/L	
S	W1905	96-0443	8/20	13:52		Lead - Dissolved	<0.14	µg/L	
S	W1905	96-0522	9/10	14:50		Lead - Dissolved	<0.14	µg/L	
S	W1905	96-0565	10/5	9:36		Lead - Dissolved	<0.14	µg/L	
S	W1905	96-0443	8/20	13:52		Magnesium - Dissolved	2.0	mg/L	
S	W1905	96-0522	9/10	14:50		Magnesium - Dissolved	2.0	mg/L	
S	W1905	96-0565	10/5	9:36		Magnesium - Dissolved	1.9	mg/L	
S	W1905	96-0443	8/20	13:52		Nickel - Dissolved	0.19	µg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1905	96-0522	9/10	14:50		Nickel - Dissolved	0.15	µg/L	
S	W1905	96-0565	10/5	9:36		Nickel - Dissolved	0.25	µg/L	
S	W1905	96-0443	8/20	13:52		Selenium - Dissolved	<2.6	µg/L	
S	W1905	96-0522	9/10	14:50		Selenium - Dissolved	<2.6	µg/L	
S	W1905	96-0565	10/5	9:36		Selenium - Dissolved	<2.6	µg/L	
S	W1905	96-0443	8/20	13:52		Silver - Dissolved	<0.13	µg/L	j
S	W1905	96-0522	9/10	14:50		Silver - Dissolved	<0.53	µg/L	
S	W1905	96-0565	10/5	9:36		Silver - Dissolved	<0.53	µg/L	
S	W1905	96-0443	8/20	13:52		Thallium - Dissolved	<0.16	µg/L	
S	W1905	96-0522	9/10	14:50		Thallium - Dissolved	<0.16	µg/L	
S	W1905	96-0565	10/5	9:36		Thallium - Dissolved	<0.16	µg/L	
S	W1905	96-0443	8/20	13:52		Zinc - Dissolved	1.4	µg/L	b, j
S	W1905	96-0522	9/10	14:50		Zinc - Dissolved	2.3	µg/L	
S	W1905	96-0565	10/5	9:36		Zinc - Dissolved	1.9	µg/L	
S	W1906	96-0017	5/19	9:44		Total Nitrogen	0.71	mg/L	
S	W1906	96-0080	6/23	9:50		Total Nitrogen	0.68	mg/L	
S	W1906	96-0287	7/28	9:51		Total Nitrogen	0.58	mg/L	
S	W1906	96-0490	9/1	9:40		Total Nitrogen	0.64	mg/L	
S	W1906	96-0539	10/6	10:08		Total Nitrogen	0.48	mg/L	
S	W1906	96-0017	5/19	9:44		Ammonia-N	<0.02	mg/L	
S	W1906	96-0080	6/23	9:50		Ammonia-N	0.04	mg/L	
S	W1906	96-0287	7/28	9:51		Ammonia-N	<0.02	mg/L	
S	W1906	96-0490	9/1	9:40		Ammonia-N	<0.02	mg/L	
S	W1906	96-0539	10/6	10:08		Ammonia-N	<0.02	mg/L	
S	W1906	96-0017	5/19	9:44		Total Phosphorus	0.037	mg/L	
S	W1906	96-0080	6/23	9:50		Total Phosphorus	0.031	mg/L	
S	W1906	96-0287	7/28	9:51		Total Phosphorus	0.034	mg/L	
S	W1906	96-0490	9/1	9:40		Total Phosphorus	0.026	mg/L	
S	W1906	96-0539	10/6	10:08		Total Phosphorus	0.037	mg/L	
S	W1906	96-0017	5/19	9:44		*E. coli*	40	CFU/100mL	
S	W1906	96-0080	6/23	9:50		*E. coli*	110	CFU/100mL	
S	W1906	96-0287	7/28	9:51		*E. coli*	80	CFU/100mL	
S	W1906	96-0417	8/13	9:45		*E. coli*	420	CFU/100mL	
S	W1906	96-0490	9/1	9:40		*E. coli*	40	CFU/100mL	
S	W1906	96-0539	10/6	10:08		*E. coli*	45	CFU/100mL	
S	W1906	96-0017	5/19	9:44		True Color	<15	PCU	
S	W1906	96-0080	6/23	9:50		True Color	23	PCU	
S	W1906	96-0287	7/28	9:51		True Color	16	PCU	
S	W1906	96-0490	9/1	9:40		True Color	16	PCU	
S	W1906	96-0539	10/6	10:08		True Color	33	PCU	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1906	96-0017	5/19	9:44		Turbidity	1.5	NTU	
S	W1906	96-0080	6/23	9:50		Turbidity	1.9	NTU	
S	W1906	96-0287	7/28	9:51		Turbidity	1.7	NTU	
S	W1906	96-0490	9/1	9:40		Turbidity	1.0	NTU	b
S	W1906	96-0539	10/6	10:08		Turbidity	1.3	NTU	
S	W1906	96-0080	6/23	9:50		Hardness	<20	mg/L	
S	W1906	96-0287	7/28	9:51		Hardness	<20	mg/L	
S	W1906	96-0442	8/20	13:20		Hardness	17	mg/L as CaCO3	
S	W1906	96-0521	9/10	14:31		Hardness	18	mg/L as CaCO3	
S	W1906	96-0564	10/5	10:02		Hardness	15	mg/L as CaCO3	
S	W1906	96-0442	8/20	13:20		Aluminum - Dissolved	<40	µg/L	
S	W1906	96-0521	9/10	14:31		Aluminum - Dissolved	<50	µg/L	
S	W1906	96-0564	10/5	10:02		Aluminum - Dissolved	<50	µg/L	
S	W1906	96-0442	8/20	13:20		Antimony - Dissolved	<0.15	µg/L	
S	W1906	96-0521	9/10	14:31		Antimony - Dissolved	<0.15	µg/L	
S	W1906	96-0564	10/5	10:02		Antimony - Dissolved	<0.15	µg/L	
S	W1906	96-0442	8/20	13:20		Arsenic - Dissolved	0.55	µg/L	
S	W1906	96-0521	9/10	14:31		Arsenic - Dissolved	<1.0	µg/L	
S	W1906	96-0564	10/5	10:02		Arsenic - Dissolved	<1.0	µg/L	
S	W1906	96-0442	8/20	13:20		Beryllium - Dissolved	<0.20	µg/L	j
S	W1906	96-0521	9/10	14:31		Beryllium - Dissolved	<0.20	µg/L	
S	W1906	96-0564	10/5	10:02		Beryllium - Dissolved	<0.20	µg/L	
S	W1906	96-0442	8/20	13:20		Cadmium - Dissolved	<0.13	µg/L	
S	W1906	96-0521	9/10	14:31		Cadmium - Dissolved	<0.13	µg/L	
S	W1906	96-0564	10/5	10:02		Cadmium - Dissolved	<0.13	µg/L	
S	W1906	96-0442	8/20	13:20		Calcium - Dissolved	3.5	mg/L	
S	W1906	96-0521	9/10	14:31		Calcium - Dissolved	3.5	mg/L	
S	W1906	96-0564	10/5	10:02		Calcium - Dissolved	2.9	mg/L	
S	W1906	96-0442	8/20	13:20		Chromium - Dissolved	<0.22	µg/L	
S	W1906	96-0521	9/10	14:31		Chromium - Dissolved	<0.22	µg/L	
S	W1906	96-0564	10/5	10:02		Chromium - Dissolved	<0.22	µg/L	
S	W1906	96-0442	8/20	13:20		Copper - Dissolved	0.71	µg/L	d, j
S	W1906	96-0521	9/10	14:31		Copper - Dissolved	<0.53	µg/L	d
S	W1906	96-0564	10/5	10:02		Copper - Dissolved	1.7	µg/L	
S	W1906	96-0442	8/20	13:20		Lead - Dissolved	<0.14	µg/L	
S	W1906	96-0521	9/10	14:31		Lead - Dissolved	<0.14	µg/L	
S	W1906	96-0564	10/5	10:02		Lead - Dissolved	<0.14	µg/L	
S	W1906	96-0442	8/20	13:20		Magnesium - Dissolved	2.1	mg/L	
S	W1906	96-0521	9/10	14:31		Magnesium - Dissolved	2.3	mg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1906	96-0564	10/5	10:02		Magnesium - Dissolved	1.8	mg/L	
S	W1906	96-0442	8/20	13:20		Nickel - Dissolved	0.22	µg/L	
S	W1906	96-0521	9/10	14:31		Nickel - Dissolved	0.15	µg/L	
S	W1906	96-0564	10/5	10:02		Nickel - Dissolved	0.23	µg/L	
S	W1906	96-0442	8/20	13:20		Selenium - Dissolved	<2.6	µg/L	
S	W1906	96-0521	9/10	14:31		Selenium - Dissolved	<2.6	µg/L	
S	W1906	96-0564	10/5	10:02		Selenium - Dissolved	<2.6	µg/L	
S	W1906	96-0442	8/20	13:20		Silver - Dissolved	<0.13	µg/L	j
S	W1906	96-0521	9/10	14:31		Silver - Dissolved	<0.53	µg/L	
S	W1906	96-0564	10/5	10:02		Silver - Dissolved	<0.53	µg/L	
S	W1906	96-0442	8/20	13:20		Thallium - Dissolved	<0.16	µg/L	
S	W1906	96-0521	9/10	14:31		Thallium - Dissolved	<0.16	µg/L	
S	W1906	96-0564	10/5	10:02		Thallium - Dissolved	<0.16	µg/L	
S	W1906	96-0442	8/20	13:20		Zinc - Dissolved	1.0	µg/L	b, j
S	W1906	96-0521	9/10	14:31		Zinc - Dissolved	0.40	µg/L	
S	W1906	96-0564	10/5	10:02		Zinc - Dissolved	1.6	µg/L	
S	W1907	96-0018	5/19	9:55		Total Nitrogen	0.61	mg/L	
S	W1907	96-0081	6/23	10:05		Total Nitrogen	0.73	mg/L	
S	W1907	96-0288	7/28	10:05		Total Nitrogen	0.75	mg/L	
S	W1907	96-0491	9/1	9:53		Total Nitrogen	1.0	mg/L	
S	W1907	96-0540	10/6	10:15		Total Nitrogen	1.5	mg/L	
S	W1907	96-0018	5/19	9:55		Ammonia-N	<0.02	mg/L	
S	W1907	96-0081	6/23	10:05		Ammonia-N	<0.02	mg/L	
S	W1907	96-0288	7/28	10:05		Ammonia-N	0.03	mg/L	
S	W1907	96-0491	9/1	9:53		Ammonia-N	0.06	mg/L	
S	W1907	96-0540	10/6	10:15		Ammonia-N	0.03	mg/L	
S	W1907	96-0018	5/19	9:55		Total Phosphorus	0.040	mg/L	
S	W1907	96-0081	6/23	10:05		Total Phosphorus	0.045	mg/L	
S	W1907	96-0288	7/28	10:05		Total Phosphorus	0.043	mg/L	
S	W1907	96-0491	9/1	9:53		Total Phosphorus	0.037	mg/L	
S	W1907	96-0540	10/6	10:15		Total Phosphorus	0.056	mg/L	
S	W1907	96-0018	5/19	9:55		*E. coli*	30	CFU/100mL	
S	W1907	96-0081	6/23	10:05		*E. coli*	60	CFU/100mL	
S	W1907	96-0288	7/28	10:05		*E. coli*	30	CFU/100mL	
S	W1907	96-0418	8/13	9:53		*E. coli*	270	CFU/100mL	
S	W1907	96-0491	9/1	9:53		*E. coli*	20	CFU/100mL	
S	W1907	96-0540	10/6	10:15		*E. coli*	18	CFU/100mL	
S	W1907	96-0018	5/19	9:55		True Color	21	PCU	
S	W1907	96-0081	6/23	10:05		True Color	29	PCU	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1907	96-0288	7/28	10:05		True Color	22	PCU	
S	W1907	96-0491	9/1	9:53		True Color	<15	PCU	
S	W1907	96-0540	10/6	10:15		True Color	27	PCU	
S	W1907	96-0018	5/19	9:55		Turbidity	1.7	NTU	
S	W1907	96-0081	6/23	10:05		Turbidity	3.1	NTU	
S	W1907	96-0288	7/28	10:05		Turbidity	4.1	NTU	
S	W1907	96-0491	9/1	9:53		Turbidity	3.8	NTU	b
S	W1907	96-0540	10/6	10:15		Turbidity	2.4	NTU	
S	W1907	96-0441	8/20	13:10		Hardness	16	mg/L as CaCO3	
S	W1907	96-0520	9/10	14:16		Hardness	15	mg/L as CaCO3	
S	W1907	96-0563	10/5	10:21		Hardness	16	mg/L as CaCO3	
S	W1907	96-0441	8/20	13:10		Aluminum - Dissolved	<40	µg/L	
S	W1907	96-0520	9/10	14:16		Aluminum - Dissolved	<50	µg/L	
S	W1907	96-0563	10/5	10:21		Aluminum - Dissolved	68	µg/L	
S	W1907	96-0441	8/20	13:10		Antimony - Dissolved	0.35	µg/L	
S	W1907	96-0520	9/10	14:16		Antimony - Dissolved	<0.15	µg/L	
S	W1907	96-0563	10/5	10:21		Antimony - Dissolved	0.21	µg/L	
S	W1907	96-0441	8/20	13:10		Arsenic - Dissolved	0.83	µg/L	
S	W1907	96-0520	9/10	14:16		Arsenic - Dissolved	<1.0	µg/L	
S	W1907	96-0563	10/5	10:21		Arsenic - Dissolved	<1.0	µg/L	
S	W1907	96-0441	8/20	13:10		Beryllium - Dissolved	<0.20	µg/L	j
S	W1907	96-0520	9/10	14:16		Beryllium - Dissolved	<0.20	µg/L	
S	W1907	96-0563	10/5	10:21		Beryllium - Dissolved	<0.20	µg/L	
S	W1907	96-0441	8/20	13:10		Cadmium - Dissolved	<0.13	µg/L	
S	W1907	96-0520	9/10	14:16		Cadmium - Dissolved	<0.13	µg/L	
S	W1907	96-0563	10/5	10:21		Cadmium - Dissolved	<0.13	µg/L	
S	W1907	96-0441	8/20	13:10		Calcium - Dissolved	3.3	mg/L	
S	W1907	96-0520	9/10	14:16		Calcium - Dissolved	2.9	mg/L	
S	W1907	96-0563	10/5	10:21		Calcium - Dissolved	3.0	mg/L	
S	W1907	96-0441	8/20	13:10		Chromium - Dissolved	<0.22	µg/L	
S	W1907	96-0520	9/10	14:16		Chromium - Dissolved	<0.22	µg/L	
S	W1907	96-0563	10/5	10:21		Chromium - Dissolved	<0.22	µg/L	
S	W1907	96-0441	8/20	13:10		Copper - Dissolved	0.71	µg/L	d, j
S	W1907	96-0520	9/10	14:16		Copper - Dissolved	2.4	µg/L	d
S	W1907	96-0563	10/5	10:21		Copper - Dissolved	0.99	µg/L	
S	W1907	96-0441	8/20	13:10		Lead - Dissolved	<0.14	µg/L	
S	W1907	96-0520	9/10	14:16		Lead - Dissolved	<0.14	µg/L	
S	W1907	96-0563	10/5	10:21		Lead - Dissolved	<0.14	µg/L	
S	W1907	96-0441	8/20	13:10		Magnesium - Dissolved	2.0	mg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1907	96-0520	9/10	14:16		Magnesium - Dissolved	2.0	mg/L	
S	W1907	96-0563	10/5	10:21		Magnesium - Dissolved	1.9	mg/L	
S	W1907	96-0441	8/20	13:10		Nickel - Dissolved	0.49	µg/L	
S	W1907	96-0520	9/10	14:16		Nickel - Dissolved	0.36	µg/L	
S	W1907	96-0563	10/5	10:21		Nickel - Dissolved	0.62	µg/L	
S	W1907	96-0441	8/20	13:10		Selenium - Dissolved	<2.6	µg/L	
S	W1907	96-0520	9/10	14:16		Selenium - Dissolved	<2.6	µg/L	
S	W1907	96-0563	10/5	10:21		Selenium - Dissolved	<2.6	µg/L	
S	W1907	96-0441	8/20	13:10		Silver - Dissolved	<0.13	µg/L	j
S	W1907	96-0520	9/10	14:16		Silver - Dissolved	<0.53	µg/L	
S	W1907	96-0563	10/5	10:21		Silver - Dissolved	<0.53	µg/L	
S	W1907	96-0441	8/20	13:10		Thallium - Dissolved	<0.16	µg/L	
S	W1907	96-0520	9/10	14:16		Thallium - Dissolved	<0.16	µg/L	
S	W1907	96-0563	10/5	10:21		Thallium - Dissolved	<0.16	µg/L	
S	W1907	96-0441	8/20	13:10		Zinc - Dissolved	2.8	µg/L	b, j
S	W1907	96-0520	9/10	14:16		Zinc - Dissolved	5.7	µg/L	
S	W1907	96-0563	10/5	10:21		Zinc - Dissolved	13	µg/L	
S	W1908	96-0019	5/19	10:07		Total Nitrogen	1.8	mg/L	
S	W1908	96-0082	6/23	10:20		Total Nitrogen	1.7	mg/L	
S	W1908	96-0289	7/28	10:25		Total Nitrogen	1.3	mg/L	
S	W1908	96-0492	9/1	10:12		Total Nitrogen	1.3	mg/L	
S	W1908	96-0541	10/6	10:27		Total Nitrogen	0.73	mg/L	
S	W1908	96-0019	5/19	10:07		Ammonia-N	<0.02	mg/L	
S	W1908	96-0082	6/23	10:20		Ammonia-N	0.02	mg/L	
S	W1908	96-0289	7/28	10:25		Ammonia-N	0.04	mg/L	
S	W1908	96-0492	9/1	10:12		Ammonia-N	0.04	mg/L	
S	W1908	96-0541	10/6	10:27		Ammonia-N	0.03	mg/L	
S	W1908	96-0019	5/19	10:07		Total Phosphorus	0.014	mg/L	
S	W1908	96-0082	6/23	10:20		Total Phosphorus	0.016	mg/L	
S	W1908	96-0289	7/28	10:25		Total Phosphorus	0.012	mg/L	
S	W1908	96-0492	9/1	10:12		Total Phosphorus	0.019	mg/L	
S	W1908	96-0541	10/6	10:27		Total Phosphorus	0.028	mg/L	
S	W1908	96-0019	5/19	10:07		*E. coli*	<10	CFU/100mL	
S	W1908	96-0082	6/23	10:20		*E. coli*	170	CFU/100mL	
S	W1908	96-0289	7/28	10:25		*E. coli*	150	CFU/100mL	
S	W1908	96-0419	8/13	10:03		*E. coli*	200	CFU/100mL	
S	W1908	96-0492	9/1	10:12		*E. coli*	20	CFU/100mL	
S	W1908	96-0541	10/6	10:27		*E. coli*	81	CFU/100mL	
S	W1908	96-0019	5/19	10:07		True Color	<15	PCU	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1908	96-0082	6/23	10:20		True Color	32	PCU	
S	W1908	96-0289	7/28	10:25		True Color	20	PCU	
S	W1908	96-0492	9/1	10:12		True Color	20	PCU	
S	W1908	96-0541	10/6	10:27		True Color	67	PCU	
S	W1908	96-0019	5/19	10:07		Turbidity	0.9	NTU	
S	W1908	96-0082	6/23	10:20		Turbidity	1.0	NTU	
S	W1908	96-0289	7/28	10:25		Turbidity	0.7	NTU	
S	W1908	96-0492	9/1	10:12		Turbidity	1.2	NTU	b
S	W1908	96-0541	10/6	10:27		Turbidity	1.3	NTU	
S	W1908	96-0440	8/20	12:52		Hardness	16	mg/L as CaCO3	
S	W1908	96-0519	9/10	13:55		Hardness	16	mg/L as CaCO3	r
S	W1908	96-0562	10/5	10:39		Hardness	14	mg/L as CaCO3	
S	W1908	96-0440	8/20	12:52		Aluminum - Dissolved	<40	µg/L	
S	W1908	96-0519	9/10	13:55		Aluminum - Dissolved	<50	µg/L	r
S	W1908	96-0562	10/5	10:39		Aluminum - Dissolved	70	µg/L	
S	W1908	96-0440	8/20	12:52		Antimony - Dissolved	0.66	µg/L	
S	W1908	96-0519	9/10	13:55		Antimony - Dissolved	0.59	µg/L	r
S	W1908	96-0562	10/5	10:39		Antimony - Dissolved	1.3	µg/L	
S	W1908	96-0440	8/20	12:52		Arsenic - Dissolved	<0.51	µg/L	
S	W1908	96-0519	9/10	13:55		Arsenic - Dissolved	<1.0	µg/L	r
S	W1908	96-0562	10/5	10:39		Arsenic - Dissolved	<1.0	µg/L	
S	W1908	96-0440	8/20	12:52		Beryllium - Dissolved	<0.20	µg/L	j
S	W1908	96-0519	9/10	13:55		Beryllium - Dissolved	<0.20	µg/L	r
S	W1908	96-0562	10/5	10:39		Beryllium - Dissolved	<0.20	µg/L	
S	W1908	96-0440	8/20	12:52		Cadmium - Dissolved	<0.13	µg/L	
S	W1908	96-0519	9/10	13:55		Cadmium - Dissolved	<0.13	µg/L	r
S	W1908	96-0562	10/5	10:39		Cadmium - Dissolved	<0.13	µg/L	
S	W1908	96-0440	8/20	12:52		Calcium - Dissolved	2.7	mg/L	
S	W1908	96-0519	9/10	13:55		Calcium - Dissolved	2.6	mg/L	r
S	W1908	96-0562	10/5	10:39		Calcium - Dissolved	2.3	mg/L	
S	W1908	96-0440	8/20	12:52		Chromium - Dissolved	<0.22	µg/L	
S	W1908	96-0519	9/10	13:55		Chromium - Dissolved	<0.22	µg/L	r
S	W1908	96-0562	10/5	10:39		Chromium - Dissolved	<0.22	µg/L	
S	W1908	96-0440	8/20	12:52		Copper - Dissolved	0.43	µg/L	d, j
S	W1908	96-0519	9/10	13:55		Copper - Dissolved	<0.53	µg/L	d, r
S	W1908	96-0562	10/5	10:39		Copper - Dissolved	0.56	µg/L	
S	W1908	96-0440	8/20	12:52		Lead - Dissolved	1.8	µg/L	
S	W1908	96-0519	9/10	13:55		Lead - Dissolved	2.1	µg/L	r
S	W1908	96-0562	10/5	10:39		Lead - Dissolved	6.3	µg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1908	96-0440	8/20	12:52		Magnesium - Dissolved	2.3	mg/L	
S	W1908	96-0519	9/10	13:55		Magnesium - Dissolved	2.2	mg/L	r
S	W1908	96-0562	10/5	10:39		Magnesium - Dissolved	2.0	mg/L	
S	W1908	96-0440	8/20	12:52		Nickel - Dissolved	0.50	µg/L	
S	W1908	96-0519	9/10	13:55		Nickel - Dissolved	0.36	µg/L	r
S	W1908	96-0562	10/5	10:39		Nickel - Dissolved	0.57	µg/L	
S	W1908	96-0440	8/20	12:52		Selenium - Dissolved	<2.6	µg/L	
S	W1908	96-0519	9/10	13:55		Selenium - Dissolved	<2.6	µg/L	r
S	W1908	96-0562	10/5	10:39		Selenium - Dissolved	<2.6	µg/L	
S	W1908	96-0440	8/20	12:52		Silver - Dissolved	<0.13	µg/L	j
S	W1908	96-0519	9/10	13:55		Silver - Dissolved	<0.53	µg/L	r
S	W1908	96-0562	10/5	10:39		Silver - Dissolved	<0.53	µg/L	
S	W1908	96-0440	8/20	12:52		Thallium - Dissolved	<0.16	µg/L	
S	W1908	96-0519	9/10	13:55		Thallium - Dissolved	<0.16	µg/L	r
S	W1908	96-0562	10/5	10:39		Thallium - Dissolved	<0.16	µg/L	
S	W1908	96-0440	8/20	12:52		Zinc - Dissolved	1.9	µg/L	b, j
S	W1908	96-0519	9/10	13:55		Zinc - Dissolved	1.4	µg/L	r
S	W1908	96-0562	10/5	10:39		Zinc - Dissolved	2.1	µg/L	
S	W1917	96-0001	5/19	10:23		Total Nitrogen	0.91	mg/L	
S	W1917	96-0064	6/23	10:09		Total Nitrogen	1.3	mg/L	
S	W1917	96-0271	7/28	10:15		Total Nitrogen	4.5	mg/L	
S	W1917	96-0474	9/1	10:40		Total Nitrogen	1.9	mg/L	
S	W1917	96-0523	10/6	10:52		Total Nitrogen	1.3	mg/L	
S	W1917	96-0001	5/19	10:23		Ammonia-N	0.08	mg/L	
S	W1917	96-0064	6/23	10:09		Ammonia-N	0.14	mg/L	
S	W1917	96-0271	7/28	10:15		Ammonia-N	0.15	mg/L	
S	W1917	96-0474	9/1	10:40		Ammonia-N	0.09	mg/L	
S	W1917	96-0523	10/6	10:52		Ammonia-N	0.06	mg/L	
S	W1917	96-0001	5/19	10:23		Total Phosphorus	0.12	mg/L	
S	W1917	96-0064	6/23	10:09		Total Phosphorus	0.18	mg/L	
S	W1917	96-0271	7/28	10:15		Total Phosphorus	0.76	mg/L	
S	W1917	96-0474	9/1	10:40		Total Phosphorus	0.24	mg/L	
S	W1917	96-0523	10/6	10:52		Total Phosphorus	0.17	mg/L	
S	W1917	96-0001	5/19	10:23		*E. coli*	80	CFU/100mL	
S	W1917	96-0064	6/23	10:09		*E. coli*	430	CFU/100mL	
S	W1917	96-0271	7/28	10:15		*E. coli*	390	CFU/100mL	
S	W1917	96-0401	8/13	10:15		*E. coli*	800	CFU/100mL	
S	W1917	96-0474	9/1	10:40		*E. coli*	670	CFU/100mL	
S	W1917	96-0523	10/6	10:52		*E. coli*	230	CFU/100mL	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1917	96-0001	5/19	10:23		True Color	205	PCU	
S	W1917	96-0064	6/23	10:09		True Color	280	PCU	
S	W1917	96-0271	7/28	10:15		True Color	600	PCU	
S	W1917	96-0474	9/1	10:40		True Color	560	PCU	
S	W1917	96-0523	10/6	10:52		True Color	380	PCU	
S	W1917	96-0001	5/19	10:23		Turbidity	5.4	NTU	b
S	W1917	96-0064	6/23	10:09		Turbidity	7.4	NTU	
S	W1917	96-0271	7/28	10:15		Turbidity	10.0	NTU	
S	W1917	96-0474	9/1	10:40		Turbidity	4.7	NTU	
S	W1917	96-0523	10/6	10:52		Turbidity	5.2	NTU	
S	W1917	96-0064	6/23	10:09		Hardness	<80	mg/L	
S	W1917	96-0271	7/28	10:15		Hardness	<20	mg/L	
S	W1917	96-0436	8/20	10:35		Hardness	35	mg/L as CaCO3	
S	W1917	96-0515	9/10	11:44		Hardness	33	mg/L as CaCO3	
S	W1917	96-0558	10/5	13:04		Hardness	26	mg/L as CaCO3	
S	W1917	96-0436	8/20	10:35		Aluminum - Dissolved	<40	µg/L	
S	W1917	96-0515	9/10	11:44		Aluminum - Dissolved	<50	µg/L	
S	W1917	96-0558	10/5	13:04		Aluminum - Dissolved	160	µg/L	
S	W1917	96-0436	8/20	10:35		Antimony - Dissolved	0.18	µg/L	
S	W1917	96-0515	9/10	11:44		Antimony - Dissolved	0.17	µg/L	
S	W1917	96-0558	10/5	13:04		Antimony - Dissolved	0.39	µg/L	
S	W1917	96-0436	8/20	10:35		Arsenic - Dissolved	0.81	µg/L	
S	W1917	96-0515	9/10	11:44		Arsenic - Dissolved	<1.0	µg/L	
S	W1917	96-0558	10/5	13:04		Arsenic - Dissolved	1.7	µg/L	
S	W1917	96-0436	8/20	10:35		Beryllium - Dissolved	<0.20	µg/L	j
S	W1917	96-0515	9/10	11:44		Beryllium - Dissolved	<0.20	µg/L	
S	W1917	96-0558	10/5	13:04		Beryllium - Dissolved	<0.20	µg/L	
S	W1917	96-0436	8/20	10:35		Cadmium - Dissolved	<0.13	µg/L	
S	W1917	96-0515	9/10	11:44		Cadmium - Dissolved	<0.13	µg/L	
S	W1917	96-0558	10/5	13:04		Cadmium - Dissolved	<0.13	µg/L	
S	W1917	96-0436	8/20	10:35		Calcium - Dissolved	6.0	mg/L	
S	W1917	96-0515	9/10	11:44		Calcium - Dissolved	5.7	mg/L	
S	W1917	96-0558	10/5	13:04		Calcium - Dissolved	4.4	mg/L	
S	W1917	96-0436	8/20	10:35		Chromium - Dissolved	<0.22	µg/L	
S	W1917	96-0515	9/10	11:44		Chromium - Dissolved	<0.22	µg/L	
S	W1917	96-0558	10/5	13:04		Chromium - Dissolved	0.66	µg/L	
S	W1917	96-0436	8/20	10:35		Copper - Dissolved	0.86	µg/L	d, j
S	W1917	96-0515	9/10	11:44		Copper - Dissolved	5.3	µg/L	d
S	W1917	96-0558	10/5	13:04		Copper - Dissolved	1.5	µg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1917	96-0436	8/20	10:35		Lead - Dissolved	0.19	µg/L	
S	W1917	96-0515	9/10	11:44		Lead - Dissolved	0.21	µg/L	
S	W1917	96-0558	10/5	13:04		Lead - Dissolved	0.98	µg/L	
S	W1917	96-0436	8/20	10:35		Magnesium - Dissolved	4.8	mg/L	
S	W1917	96-0515	9/10	11:44		Magnesium - Dissolved	4.5	mg/L	
S	W1917	96-0558	10/5	13:04		Magnesium - Dissolved	3.6	mg/L	
S	W1917	96-0436	8/20	10:35		Nickel - Dissolved	0.29	µg/L	
S	W1917	96-0515	9/10	11:44		Nickel - Dissolved	0.29	µg/L	
S	W1917	96-0558	10/5	13:04		Nickel - Dissolved	1.1	µg/L	
S	W1917	96-0436	8/20	10:35		Selenium - Dissolved	<2.6	µg/L	
S	W1917	96-0515	9/10	11:44		Selenium - Dissolved	<2.6	µg/L	
S	W1917	96-0558	10/5	13:04		Selenium - Dissolved	<2.6	µg/L	
S	W1917	96-0436	8/20	10:35		Silver - Dissolved	0.15	µg/L	j
S	W1917	96-0515	9/10	11:44		Silver - Dissolved	<0.53	µg/L	
S	W1917	96-0558	10/5	13:04		Silver - Dissolved	<0.53	µg/L	
S	W1917	96-0436	8/20	10:35		Thallium - Dissolved	<0.16	µg/L	
S	W1917	96-0515	9/10	11:44		Thallium - Dissolved	<0.16	µg/L	
S	W1917	96-0558	10/5	13:04		Thallium - Dissolved	<0.16	µg/L	
S	W1917	96-0436	8/20	10:35		Zinc - Dissolved	1.0	µg/L	b, j
S	W1917	96-0515	9/10	11:44		Zinc - Dissolved	1.1	µg/L	
S	W1917	96-0558	10/5	13:04		Zinc - Dissolved	4.0	µg/L	
S	W1909	96-0020	5/19	10:23		Total Nitrogen	0.40	mg/L	
S	W1909	96-0083	6/23	10:35		Total Nitrogen	0.49	mg/L	
S	W1909	96-0290	7/28	10:40		Total Nitrogen	0.39	mg/L	
S	W1909	96-0493	9/1	10:25		Total Nitrogen	0.41	mg/L	
S	W1909	96-0542	10/6	10:43		Total Nitrogen	0.31	mg/L	
S	W1909	96-0020	5/19	10:23		Ammonia-N	<0.02	mg/L	
S	W1909	96-0083	6/23	10:35		Ammonia-N	0.03	mg/L	
S	W1909	96-0290	7/28	10:40		Ammonia-N	<0.02	mg/L	
S	W1909	96-0493	9/1	10:25		Ammonia-N	0.02	mg/L	
S	W1909	96-0542	10/6	10:43		Ammonia-N	<0.02	mg/L	
S	W1909	96-0020	5/19	10:23		Total Phosphorus	0.024	mg/L	
S	W1909	96-0083	6/23	10:35		Total Phosphorus	0.054	mg/L	
S	W1909	96-0290	7/28	10:40		Total Phosphorus	0.052	mg/L	
S	W1909	96-0493	9/1	10:25		Total Phosphorus	0.041	mg/L	
S	W1909	96-0542	10/6	10:43		Total Phosphorus	0.032	mg/L	
S	W1909	96-0020	5/19	10:23		*E. coli*	40	CFU/100mL	
S	W1909	96-0083	6/23	10:35		*E. coli*	270	CFU/100mL	
S	W1909	96-0290	7/28	10:40		*E. coli*	30	CFU/100mL	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1909	96-0420	8/13	10:14		*E. coli*	580	CFU/100mL	
S	W1909	96-0493	9/1	10:25		*E. coli*	80	CFU/100mL	
S	W1909	96-0542	10/6	10:43		*E. coli*	27	CFU/100mL	
S	W1909	96-0020	5/19	10:23		True Color	<15	PCU	
S	W1909	96-0083	6/23	10:35		True Color	45	PCU	
S	W1909	96-0290	7/28	10:40		True Color	30	PCU	
S	W1909	96-0493	9/1	10:25		True Color	64	PCU	
S	W1909	96-0542	10/6	10:43		True Color	45	PCU	
S	W1909	96-0020	5/19	10:23		Turbidity	2.7	NTU	d
S	W1909	96-0083	6/23	10:35		Turbidity	3.7	NTU	
S	W1909	96-0290	7/28	10:40		Turbidity	3.5	NTU	
S	W1909	96-0493	9/1	10:25		Turbidity	3.1	NTU	b
S	W1909	96-0542	10/6	10:43		Turbidity	2.1	NTU	
S	W1909	96-0083	6/23	10:35		Hardness	<20	mg/L	
S	W1909	96-0290	7/28	10:40		Hardness	<20	mg/L	
S	W1909	96-0437	8/20	12:20		Hardness	16	mg/L as CaCO3	
S	W1909	96-0516	9/10	13:32		Hardness	16	mg/L as CaCO3	
S	W1909	96-0559	10/5	10:53		Hardness	14	mg/L as CaCO3	
S	W1909	96-0437	8/20	12:20		Aluminum - Dissolved	<40	µg/L	
S	W1909	96-0516	9/10	13:32		Aluminum - Dissolved	<50	µg/L	
S	W1909	96-0559	10/5	10:53		Aluminum - Dissolved	<50	µg/L	
S	W1909	96-0437	8/20	12:20		Antimony - Dissolved	<0.15	µg/L	
S	W1909	96-0516	9/10	13:32		Antimony - Dissolved	<0.15	µg/L	
S	W1909	96-0559	10/5	10:53		Antimony - Dissolved	<0.15	µg/L	
S	W1909	96-0437	8/20	12:20		Arsenic - Dissolved	0.56	µg/L	
S	W1909	96-0516	9/10	13:32		Arsenic - Dissolved	<1.0	µg/L	
S	W1909	96-0559	10/5	10:53		Arsenic - Dissolved	<1.0	µg/L	
S	W1909	96-0437	8/20	12:20		Beryllium - Dissolved	<0.20	µg/L	j
S	W1909	96-0516	9/10	13:32		Beryllium - Dissolved	<0.20	µg/L	
S	W1909	96-0559	10/5	10:53		Beryllium - Dissolved	<0.20	µg/L	
S	W1909	96-0437	8/20	12:20		Cadmium - Dissolved	<0.13	µg/L	
S	W1909	96-0516	9/10	13:32		Cadmium - Dissolved	<0.13	µg/L	
S	W1909	96-0559	10/5	10:53		Cadmium - Dissolved	<0.13	µg/L	
S	W1909	96-0437	8/20	12:20		Calcium - Dissolved	3.0	mg/L	
S	W1909	96-0516	9/10	13:32		Calcium - Dissolved	3.0	mg/L	
S	W1909	96-0559	10/5	10:53		Calcium - Dissolved	2.5	mg/L	
S	W1909	96-0437	8/20	12:20		Chromium - Dissolved	<0.22	µg/L	
S	W1909	96-0516	9/10	13:32		Chromium - Dissolved	<0.22	µg/L	
S	W1909	96-0559	10/5	10:53		Chromium - Dissolved	<0.22	µg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1909	96-0437	8/20	12:20		Copper - Dissolved	##	µg/L	d, j
S	W1909	96-0516	9/10	13:32		Copper - Dissolved	##	µg/L	d
S	W1909	96-0559	10/5	10:53		Copper - Dissolved	<0.53	µg/L	
S	W1909	96-0437	8/20	12:20		Lead - Dissolved	<0.14	µg/L	
S	W1909	96-0516	9/10	13:32		Lead - Dissolved	<0.14	µg/L	
S	W1909	96-0559	10/5	10:53		Lead - Dissolved	<0.14	µg/L	
S	W1909	96-0437	8/20	12:20		Magnesium - Dissolved	2.0	mg/L	
S	W1909	96-0516	9/10	13:32		Magnesium - Dissolved	2.0	mg/L	
S	W1909	96-0559	10/5	10:53		Magnesium - Dissolved	1.8	mg/L	
S	W1909	96-0437	8/20	12:20		Nickel - Dissolved	0.29	µg/L	
S	W1909	96-0516	9/10	13:32		Nickel - Dissolved	0.23	µg/L	
S	W1909	96-0559	10/5	10:53		Nickel - Dissolved	0.40	µg/L	
S	W1909	96-0437	8/20	12:20		Selenium - Dissolved	<2.6	µg/L	
S	W1909	96-0516	9/10	13:32		Selenium - Dissolved	<2.6	µg/L	
S	W1909	96-0559	10/5	10:53		Selenium - Dissolved	<2.6	µg/L	
S	W1909	96-0437	8/20	12:20		Silver - Dissolved	0.15	µg/L	j
S	W1909	96-0516	9/10	13:32		Silver - Dissolved	<0.53	µg/L	
S	W1909	96-0559	10/5	10:53		Silver - Dissolved	<0.53	µg/L	
S	W1909	96-0437	8/20	12:20		Thallium - Dissolved	<0.16	µg/L	
S	W1909	96-0516	9/10	13:32		Thallium - Dissolved	<0.16	µg/L	
S	W1909	96-0559	10/5	10:53		Thallium - Dissolved	<0.16	µg/L	
S	W1909	96-0437	8/20	12:20		Zinc - Dissolved	0.75	µg/L	b, j
S	W1909	96-0516	9/10	13:32		Zinc - Dissolved	0.51	µg/L	
S	W1909	96-0559	10/5	10:53		Zinc - Dissolved	1.2	µg/L	
S	W1910	96-0023	5/19	10:43		Total Nitrogen	0.51	mg/L	
S	W1910	96-0086	6/23	10:55		Total Nitrogen	0.65	mg/L	
S	W1910	96-0293	7/28	11:17		Total Nitrogen	0.46	mg/L	
S	W1910	96-0496	9/1	10:45		Total Nitrogen	0.44	mg/L	
S	W1910	96-0545	10/6	11:14		Total Nitrogen	0.34	mg/L	
S	W1910	96-0023	5/19	10:43		Ammonia-N	<0.02	mg/L	
S	W1910	96-0086	6/23	10:55		Ammonia-N	0.05	mg/L	
S	W1910	96-0293	7/28	11:17		Ammonia-N	0.03	mg/L	
S	W1910	96-0496	9/1	10:45		Ammonia-N	0.02	mg/L	
S	W1910	96-0545	10/6	11:14		Ammonia-N	<0.02	mg/L	
S	W1910	96-0023	5/19	10:43		Total Phosphorus	0.023	mg/L	
S	W1910	96-0086	6/23	10:55		Total Phosphorus	0.043	mg/L	
S	W1910	96-0293	7/28	11:17		Total Phosphorus	0.035	mg/L	
S	W1910	96-0496	9/1	10:45		Total Phosphorus	0.027	mg/L	
S	W1910	96-0545	10/6	11:14		Total Phosphorus	0.017	mg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1910	96-0023	5/19	10:43		*E. coli*	10	CFU/100mL	
S	W1910	96-0086	6/23	10:55		*E. coli*	420	CFU/100mL	
S	W1910	96-0293	7/28	11:17		*E. coli*	30	CFU/100mL	
S	W1910	96-0423	8/13	10:25		*E. coli*	360	CFU/100mL	
S	W1910	96-0496	9/1	10:45		*E. coli*	80	CFU/100mL	
S	W1910	96-0545	10/6	11:14		*E. coli*	27	CFU/100mL	
S	W1910	96-0023	5/19	10:43		True Color	<15	PCU	
S	W1910	96-0086	6/23	10:55		True Color	48	PCU	
S	W1910	96-0293	7/28	11:17		True Color	37	PCU	
S	W1910	96-0496	9/1	10:45		True Color	73	PCU	
S	W1910	96-0545	10/6	11:14		True Color	49	PCU	
S	W1910	96-0023	5/19	10:43		Turbidity	1.3	NTU	
S	W1910	96-0086	6/23	10:55		Turbidity	2.0	NTU	
S	W1910	96-0293	7/28	11:17		Turbidity	1.9	NTU	
S	W1910	96-0496	9/1	10:45		Turbidity	1.0	NTU	b
S	W1910	96-0545	10/6	11:14		Turbidity	0.9	NTU	
S	W1916	96-0002	5/19	10:43		Total Nitrogen	0.52	mg/L	
S	W1916	96-0065	6/23	10:28		Total Nitrogen	0.92	mg/L	
S	W1916	96-0272	7/28	10:32		Total Nitrogen	0.96	mg/L	
S	W1916	96-0475	9/1	10:54		Total Nitrogen	1.3	mg/L	
S	W1916	96-0524	10/6	10:59		Total Nitrogen	0.73	mg/L	
S	W1916	96-0002	5/19	10:43		Ammonia-N	0.05	mg/L	
S	W1916	96-0065	6/23	10:28		Ammonia-N	0.11	mg/L	
S	W1916	96-0272	7/28	10:32		Ammonia-N	0.10	mg/L	
S	W1916	96-0475	9/1	10:54		Ammonia-N	0.11	mg/L	
S	W1916	96-0524	10/6	10:59		Ammonia-N	0.07	mg/L	
S	W1916	96-0002	5/19	10:43		Total Phosphorus	0.093	mg/L	
S	W1916	96-0065	6/23	10:28		Total Phosphorus	0.14	mg/L	
S	W1916	96-0272	7/28	10:32		Total Phosphorus	0.18	mg/L	
S	W1916	96-0475	9/1	10:54		Total Phosphorus	0.18	mg/L	
S	W1916	96-0524	10/6	10:59		Total Phosphorus	0.12	mg/L	
S	W1916	96-0002	5/19	10:43		*E. coli*	60	CFU/100mL	
S	W1916	96-0065	6/23	10:28		*E. coli*	130	CFU/100mL	
S	W1916	96-0272	7/28	10:32		*E. coli*	60	CFU/100mL	
S	W1916	96-0402	8/13	10:24		*E. coli*	290	CFU/100mL	
S	W1916	96-0475	9/1	10:54		*E. coli*	320	CFU/100mL	
S	W1916	96-0524	10/6	10:59		*E. coli*	240	CFU/100mL	
S	W1916	96-0002	5/19	10:43		True Color	120	PCU	
S	W1916	96-0065	6/23	10:28		True Color	210	PCU	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1916	96-0272	7/28	10:32		True Color	270	PCU	
S	W1916	96-0475	9/1	10:54		True Color	360	PCU	
S	W1916	96-0524	10/6	10:59		True Color	200	PCU	
S	W1916	96-0002	5/19	10:43		Turbidity	4.6	NTU	b
S	W1916	96-0065	6/23	10:28		Turbidity	8.6	NTU	
S	W1916	96-0272	7/28	10:32		Turbidity	11.5	NTU	
S	W1916	96-0475	9/1	10:54		Turbidity	5.1	NTU	
S	W1916	96-0524	10/6	10:59		Turbidity	6.1	NTU	
S	W1916	96-0065	6/23	10:28		Hardness	<40	mg/L	d
S	W1916	96-0272	7/28	10:32		Hardness	<20	mg/L	
S	W1916	96-0435	8/20	10:10		Hardness	31	mg/L as CaCO3	
S	W1916	96-0514	9/10	10:59		Hardness	28	mg/L as CaCO3	
S	W1916	96-0557	10/5	13:25		Hardness	24	mg/L as CaCO3	
S	W1916	96-0435	8/20	10:10		Aluminum - Dissolved	<40	µg/L	
S	W1916	96-0514	9/10	10:59		Aluminum - Dissolved	<50	µg/L	
S	W1916	96-0557	10/5	13:25		Aluminum - Dissolved	130	µg/L	
S	W1916	96-0435	8/20	10:10		Antimony - Dissolved	0.30	µg/L	
S	W1916	96-0514	9/10	10:59		Antimony - Dissolved	0.19	µg/L	
S	W1916	96-0557	10/5	13:25		Antimony - Dissolved	0.37	µg/L	
S	W1916	96-0435	8/20	10:10		Arsenic - Dissolved	0.84	µg/L	
S	W1916	96-0514	9/10	10:59		Arsenic - Dissolved	<1.0	µg/L	
S	W1916	96-0557	10/5	13:25		Arsenic - Dissolved	1.2	µg/L	
S	W1916	96-0435	8/20	10:10		Beryllium - Dissolved	<0.20	µg/L	j
S	W1916	96-0514	9/10	10:59		Beryllium - Dissolved	<0.20	µg/L	
S	W1916	96-0557	10/5	13:25		Beryllium - Dissolved	<0.20	µg/L	
S	W1916	96-0435	8/20	10:10		Cadmium - Dissolved	<0.13	µg/L	
S	W1916	96-0514	9/10	10:59		Cadmium - Dissolved	<0.13	µg/L	
S	W1916	96-0557	10/5	13:25		Cadmium - Dissolved	<0.13	µg/L	
S	W1916	96-0435	8/20	10:10		Calcium - Dissolved	5.3	mg/L	
S	W1916	96-0514	9/10	10:59		Calcium - Dissolved	4.7	mg/L	
S	W1916	96-0557	10/5	13:25		Calcium - Dissolved	3.5	mg/L	
S	W1916	96-0435	8/20	10:10		Chromium - Dissolved	<0.22	µg/L	
S	W1916	96-0514	9/10	10:59		Chromium - Dissolved	<0.22	µg/L	
S	W1916	96-0557	10/5	13:25		Chromium - Dissolved	0.44	µg/L	
S	W1916	96-0435	8/20	10:10		Copper - Dissolved	9.0	µg/L	d, j
S	W1916	96-0514	9/10	10:59		Copper - Dissolved	<0.53	µg/L	d
S	W1916	96-0557	10/5	13:25		Copper - Dissolved	1.1	µg/L	
S	W1916	96-0435	8/20	10:10		Lead - Dissolved	<0.14	µg/L	
S	W1916	96-0514	9/10	10:59		Lead - Dissolved	<0.14	µg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1916	96-0557	10/5	13:25		Lead - Dissolved	0.37	µg/L	
S	W1916	96-0435	8/20	10:10		Magnesium - Dissolved	4.3	mg/L	
S	W1916	96-0514	9/10	10:59		Magnesium - Dissolved	3.9	mg/L	
S	W1916	96-0557	10/5	13:25		Magnesium - Dissolved	3.7	mg/L	
S	W1916	96-0435	8/20	10:10		Nickel - Dissolved	0.34	µg/L	
S	W1916	96-0514	9/10	10:59		Nickel - Dissolved	0.29	µg/L	
S	W1916	96-0557	10/5	13:25		Nickel - Dissolved	0.98	µg/L	
S	W1916	96-0435	8/20	10:10		Selenium - Dissolved	<2.6	µg/L	
S	W1916	96-0514	9/10	10:59		Selenium - Dissolved	<2.6	µg/L	
S	W1916	96-0557	10/5	13:25		Selenium - Dissolved	<2.6	µg/L	
S	W1916	96-0435	8/20	10:10		Silver - Dissolved	0.43	µg/L	j
S	W1916	96-0514	9/10	10:59		Silver - Dissolved	<0.53	µg/L	
S	W1916	96-0557	10/5	13:25		Silver - Dissolved	<0.53	µg/L	
S	W1916	96-0435	8/20	10:10		Thallium - Dissolved	<0.16	µg/L	
S	W1916	96-0514	9/10	10:59		Thallium - Dissolved	<0.16	µg/L	
S	W1916	96-0557	10/5	13:25		Thallium - Dissolved	<0.16	µg/L	
S	W1916	96-0435	8/20	10:10		Zinc - Dissolved	0.96	µg/L	b, j
S	W1916	96-0514	9/10	10:59		Zinc - Dissolved	0.60	µg/L	
S	W1916	96-0557	10/5	13:25		Zinc - Dissolved	2.8	µg/L	
S	W1911	96-0024	5/19	10:58		Total Nitrogen	0.50	mg/L	
S	W1911	96-0087	6/23	11:16		Total Nitrogen	0.51	mg/L	
S	W1911	96-0294	7/28	11:30		Total Nitrogen	0.54	mg/L	
S	W1911	96-0497	9/1	11:03		Total Nitrogen	0.46	mg/L	
S	W1911	96-0546	10/6	11:27		Total Nitrogen	0.45	mg/L	
S	W1911	96-0024	5/19	10:58		Ammonia-N	0.03	mg/L	
S	W1911	96-0087	6/23	11:16		Ammonia-N	0.04	mg/L	
S	W1911	96-0294	7/28	11:30		Ammonia-N	0.04	mg/L	
S	W1911	96-0497	9/1	11:03		Ammonia-N	0.03	mg/L	
S	W1911	96-0546	10/6	11:27		Ammonia-N	0.04	mg/L	
S	W1911	96-0024	5/19	10:58		Total Phosphorus	0.021	mg/L	
S	W1911	96-0087	6/23	11:16		Total Phosphorus	0.032	mg/L	
S	W1911	96-0294	7/28	11:30		Total Phosphorus	0.033	mg/L	
S	W1911	96-0497	9/1	11:03		Total Phosphorus	0.024	mg/L	
S	W1911	96-0546	10/6	11:27		Total Phosphorus	0.020	mg/L	
S	W1911	96-0024	5/19	10:58		*E. coli*	60	CFU/100mL	
S	W1911	96-0087	6/23	11:16		*E. coli*	50	CFU/100mL	
S	W1911	96-0294	7/28	11:30		*E. coli*	10	CFU/100mL	
S	W1911	96-0424	8/13	10:40		*E. coli*	190	CFU/100mL	
S	W1911	96-0497	9/1	11:03		*E. coli*	50	CFU/100mL	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1911	96-0546	10/6	11:27		*E. coli*	<10	CFU/100mL	
S	W1911	96-0024	5/19	10:58		True Color	<15	PCU	
S	W1911	96-0087	6/23	11:16		True Color	<15	PCU	
S	W1911	96-0294	7/28	11:30		True Color	<15	PCU	
S	W1911	96-0497	9/1	11:03		True Color	<15	PCU	
S	W1911	96-0546	10/6	11:27		True Color	<15	PCU	
S	W1911	96-0024	5/19	10:58		Turbidity	1.6	NTU	
S	W1911	96-0087	6/23	11:16		Turbidity	2.1	NTU	
S	W1911	96-0294	7/28	11:30		Turbidity	1.3	NTU	
S	W1911	96-0497	9/1	11:03		Turbidity	1.7	NTU	b
S	W1911	96-0546	10/6	11:27		Turbidity	1.2	NTU	
S	W1915	96-0005	5/19	11:03		Total Nitrogen	0.24	mg/L	
S	W1915	96-0068	6/23	10:49		Total Nitrogen	0.34	mg/L	
S	W1915	96-0275	7/28	10:50		Total Nitrogen	0.33	mg/L	
S	W1915	96-0478	9/1	11:16		Total Nitrogen	0.34	mg/L	
S	W1915	96-0527	10/6	11:14		Total Nitrogen	0.21	mg/L	
S	W1915	96-0005	5/19	11:03		Ammonia-N	<0.02	mg/L	
S	W1915	96-0068	6/23	10:49		Ammonia-N	0.03	mg/L	
S	W1915	96-0275	7/28	10:50		Ammonia-N	0.03	mg/L	
S	W1915	96-0478	9/1	11:16		Ammonia-N	0.03	mg/L	
S	W1915	96-0527	10/6	11:14		Ammonia-N	0.02	mg/L	
S	W1915	96-0005	5/19	11:03		Total Phosphorus	0.032	mg/L	
S	W1915	96-0068	6/23	10:49		Total Phosphorus	0.042	mg/L	
S	W1915	96-0275	7/28	10:50		Total Phosphorus	0.046	mg/L	
S	W1915	96-0478	9/1	11:16		Total Phosphorus	0.042	mg/L	
S	W1915	96-0527	10/6	11:14		Total Phosphorus	0.029	mg/L	
S	W1915	96-0005	5/19	11:03		*E. coli*	10	CFU/100mL	
S	W1915	96-0068	6/23	10:49		*E. coli*	150	CFU/100mL	
S	W1915	96-0275	7/28	10:50		*E. coli*	40	CFU/100mL	
S	W1915	96-0405	8/13	10:35		*E. coli*	620	CFU/100mL	
S	W1915	96-0478	9/1	11:16		*E. coli*	40	CFU/100mL	
S	W1915	96-0527	10/6	11:14		*E. coli*	99	CFU/100mL	
S	W1915	96-0005	5/19	11:03		True Color	15	PCU	
S	W1915	96-0068	6/23	10:49		True Color	71	PCU	
S	W1915	96-0275	7/28	10:50		True Color	56	PCU	
S	W1915	96-0478	9/1	11:16		True Color	60	PCU	
S	W1915	96-0527	10/6	11:14		True Color	44	PCU	
S	W1915	96-0005	5/19	11:03		Turbidity	1.3	NTU	b
S	W1915	96-0068	6/23	10:49		Turbidity	2.0	NTU	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1915	96-0275	7/28	10:50		Turbidity	1.8	NTU	
S	W1915	96-0478	9/1	11:16		Turbidity	1.7	NTU	
S	W1915	96-0527	10/6	11:14		Turbidity	1.3	NTU	
S	W1915	96-0068	6/23	10:49		Hardness	22	mg/L	
S	W1915	96-0275	7/28	10:50		Hardness	22	mg/L	
S	W1915	96-0434	8/20	10:00		Hardness	23	mg/L as CaCO3	
S	W1915	96-0513	9/10	10:14		Hardness	22	mg/L as CaCO3	
S	W1915	96-0556	10/5	13:44		Hardness	21	mg/L as CaCO3	
S	W1915	96-0434	8/20	10:00		Aluminum - Dissolved	<40	µg/L	
S	W1915	96-0513	9/10	10:14		Aluminum - Dissolved	<50	µg/L	
S	W1915	96-0556	10/5	13:44		Aluminum - Dissolved	<50	µg/L	
S	W1915	96-0434	8/20	10:00		Antimony - Dissolved	<0.15	µg/L	
S	W1915	96-0513	9/10	10:14		Antimony - Dissolved	<0.15	µg/L	
S	W1915	96-0556	10/5	13:44		Antimony - Dissolved	<0.15	µg/L	
S	W1915	96-0434	8/20	10:00		Arsenic - Dissolved	0.77	µg/L	
S	W1915	96-0513	9/10	10:14		Arsenic - Dissolved	<1.0	µg/L	
S	W1915	96-0556	10/5	13:44		Arsenic - Dissolved	<1.0	µg/L	
S	W1915	96-0434	8/20	10:00		Beryllium - Dissolved	<0.20	µg/L	j
S	W1915	96-0513	9/10	10:14		Beryllium - Dissolved	<0.20	µg/L	
S	W1915	96-0556	10/5	13:44		Beryllium - Dissolved	<0.20	µg/L	
S	W1915	96-0434	8/20	10:00		Cadmium - Dissolved	<0.13	µg/L	
S	W1915	96-0513	9/10	10:14		Cadmium - Dissolved	<0.13	µg/L	
S	W1915	96-0556	10/5	13:44		Cadmium - Dissolved	<0.13	µg/L	
S	W1915	96-0434	8/20	10:00		Calcium - Dissolved	3.6	mg/L	
S	W1915	96-0513	9/10	10:14		Calcium - Dissolved	3.5	mg/L	
S	W1915	96-0556	10/5	13:44		Calcium - Dissolved	3.3	mg/L	
S	W1915	96-0434	8/20	10:00		Chromium - Dissolved	<0.22	µg/L	
S	W1915	96-0513	9/10	10:14		Chromium - Dissolved	<0.22	µg/L	
S	W1915	96-0556	10/5	13:44		Chromium - Dissolved	<0.22	µg/L	
S	W1915	96-0434	8/20	10:00		Copper - Dissolved	0.60	µg/L	d, j
S	W1915	96-0513	9/10	10:14		Copper - Dissolved	1.2	µg/L	d
S	W1915	96-0556	10/5	13:44		Copper - Dissolved	<0.53	µg/L	
S	W1915	96-0434	8/20	10:00		Lead - Dissolved	<0.14	µg/L	
S	W1915	96-0513	9/10	10:14		Lead - Dissolved	<0.14	µg/L	
S	W1915	96-0556	10/5	13:44		Lead - Dissolved	0.16	µg/L	
S	W1915	96-0434	8/20	10:00		Magnesium - Dissolved	3.3	mg/L	
S	W1915	96-0513	9/10	10:14		Magnesium - Dissolved	3.1	mg/L	
S	W1915	96-0556	10/5	13:44		Magnesium - Dissolved	3.0	mg/L	
S	W1915	96-0434	8/20	10:00		Nickel - Dissolved	0.25	µg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1915	96-0513	9/10	10:14		Nickel - Dissolved	0.21	µg/L	
S	W1915	96-0556	10/5	13:44		Nickel - Dissolved	0.30	µg/L	
S	W1915	96-0434	8/20	10:00		Selenium - Dissolved	<2.6	µg/L	
S	W1915	96-0513	9/10	10:14		Selenium - Dissolved	<2.6	µg/L	
S	W1915	96-0556	10/5	13:44		Selenium - Dissolved	<2.6	µg/L	
S	W1915	96-0434	8/20	10:00		Silver - Dissolved	<0.13	µg/L	j
S	W1915	96-0513	9/10	10:14		Silver - Dissolved	<0.53	µg/L	
S	W1915	96-0556	10/5	13:44		Silver - Dissolved	<0.53	µg/L	
S	W1915	96-0434	8/20	10:00		Thallium - Dissolved	<0.16	µg/L	
S	W1915	96-0513	9/10	10:14		Thallium - Dissolved	<0.16	µg/L	
S	W1915	96-0556	10/5	13:44		Thallium - Dissolved	<0.16	µg/L	
S	W1915	96-0434	8/20	10:00		Zinc - Dissolved	1.0	µg/L	b, j
S	W1915	96-0513	9/10	10:14		Zinc - Dissolved	0.37	µg/L	
S	W1915	96-0556	10/5	13:44		Zinc - Dissolved	0.77	µg/L	
S	W1912	96-0025	5/19	11:12		Total Nitrogen	1.2	mg/L	
S	W1912	96-0088	6/23	11:35		Total Nitrogen	1.2	mg/L	
S	W1912	96-0295	7/28	11:52		Total Nitrogen	1.3	mg/L	
S	W1912	96-0498	9/1	11:23		Total Nitrogen	1.4	mg/L	
S	W1912	96-0547	10/6	11:48		Total Nitrogen	1.0	mg/L	
S	W1912	96-0025	5/19	11:12		Ammonia-N	0.07	mg/L	
S	W1912	96-0088	6/23	11:35		Ammonia-N	0.11	mg/L	
S	W1912	96-0295	7/28	11:52		Ammonia-N	0.06	mg/L	
S	W1912	96-0498	9/1	11:23		Ammonia-N	<0.02	mg/L	
S	W1912	96-0547	10/6	11:48		Ammonia-N	<0.02	mg/L	
S	W1912	96-0025	5/19	11:12		Total Phosphorus	0.046	mg/L	
S	W1912	96-0088	6/23	11:35		Total Phosphorus	0.058	mg/L	
S	W1912	96-0295	7/28	11:52		Total Phosphorus	0.057	mg/L	
S	W1912	96-0498	9/1	11:23		Total Phosphorus	0.099	mg/L	
S	W1912	96-0547	10/6	11:48		Total Phosphorus	0.077	mg/L	
S	W1912	96-0025	5/19	11:12		*E. coli*	<10	CFU/100mL	
S	W1912	96-0088	6/23	11:35		*E. coli*	150	CFU/100mL	
S	W1912	96-0295	7/28	11:52		*E. coli*	100	CFU/100mL	
S	W1912	96-0425	8/13	11:00		*E. coli*	710	CFU/100mL	
S	W1912	96-0498	9/1	11:23		*E. coli*	130	CFU/100mL	
S	W1912	96-0547	10/6	11:48		*E. coli*	27	CFU/100mL	
S	W1912	96-0025	5/19	11:12		True Color	<15	PCU	
S	W1912	96-0088	6/23	11:35		True Color	18	PCU	
S	W1912	96-0295	7/28	11:52		True Color	<15	PCU	
S	W1912	96-0498	9/1	11:23		True Color	19	PCU	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1912	96-0547	10/6	11:48		True Color	<15	PCU	
S	W1912	96-0025	5/19	11:12		Turbidity	2.3	NTU	
S	W1912	96-0088	6/23	11:35		Turbidity	5.9	NTU	
S	W1912	96-0295	7/28	11:52		Turbidity	6.3	NTU	
S	W1912	96-0498	9/1	11:23		Turbidity	20.5	NTU	b
S	W1912	96-0547	10/6	11:48		Turbidity	16.5	NTU	
S	W1913	96-0026	5/19	11:25		Total Nitrogen	0.77	mg/L	
S	W1913	96-0089	6/23	11:55		Total Nitrogen	0.75	mg/L	
S	W1913	96-0296	7/28	12:17		Total Nitrogen	0.94	mg/L	
S	W1913	96-0499	9/1	11:38		Total Nitrogen	0.86	mg/L	
S	W1913	96-0548	10/6	12:02		Total Nitrogen	0.96	mg/L	
S	W1913	96-0026	5/19	11:25		Ammonia-N	<0.02	mg/L	
S	W1913	96-0089	6/23	11:55		Ammonia-N	0.02	mg/L	
S	W1913	96-0296	7/28	12:17		Ammonia-N	0.04	mg/L	
S	W1913	96-0499	9/1	11:38		Ammonia-N	0.04	mg/L	
S	W1913	96-0548	10/6	12:02		Ammonia-N	0.02	mg/L	
S	W1913	96-0026	5/19	11:25		Total Phosphorus	0.016	mg/L	
S	W1913	96-0089	6/23	11:55		Total Phosphorus	0.022	mg/L	
S	W1913	96-0296	7/28	12:17		Total Phosphorus	0.034	mg/L	
S	W1913	96-0499	9/1	11:38		Total Phosphorus	0.017	mg/L	
S	W1913	96-0548	10/6	12:02		Total Phosphorus	0.022	mg/L	
S	W1913	96-0026	5/19	11:25		*E. coli*	40	CFU/100mL	
S	W1913	96-0089	6/23	11:55		*E. coli*	200	CFU/100mL	
S	W1913	96-0296	7/28	12:17		*E. coli*	190	CFU/100mL	
S	W1913	96-0426	8/13	11:15		*E. coli*	900	CFU/100mL	
S	W1913	96-0499	9/1	11:38		*E. coli*	130	CFU/100mL	
S	W1913	96-0548	10/6	12:02		*E. coli*	28	CFU/100mL	
S	W1913	96-0026	5/19	11:25		True Color	24	PCU	
S	W1913	96-0089	6/23	11:55		True Color	71	PCU	
S	W1913	96-0296	7/28	12:17		True Color	40	PCU	
S	W1913	96-0499	9/1	11:38		True Color	43	PCU	
S	W1913	96-0548	10/6	12:02		True Color	34	PCU	
S	W1913	96-0026	5/19	11:25		Turbidity	1.6	NTU	
S	W1913	96-0089	6/23	11:55		Turbidity	2.3	NTU	
S	W1913	96-0296	7/28	12:17		Turbidity	2.3	NTU	
S	W1913	96-0499	9/1	11:38		Turbidity	1.4	NTU	b
S	W1913	96-0548	10/6	12:02		Turbidity	4.0	NTU	
S	W1918	96-0007	5/19	11:54		Total Nitrogen	1.2	mg/L	
S	W1918	96-0070	6/23	11:54		Total Nitrogen	1.1	mg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1918	96-0277	7/28	13:05		Total Nitrogen	1.1	mg/L	
S	W1918	96-0480	9/1	12:10		Total Nitrogen	1.2	mg/L	
S	W1918	96-0529	10/6	12:09		Total Nitrogen	1.2	mg/L	
S	W1918	96-0007	5/19	11:54		Ammonia-N	<0.02	mg/L	
S	W1918	96-0070	6/23	11:54		Ammonia-N	0.02	mg/L	
S	W1918	96-0277	7/28	13:05		Ammonia-N	0.05	mg/L	
S	W1918	96-0480	9/1	12:10		Ammonia-N	0.05	mg/L	
S	W1918	96-0529	10/6	12:09		Ammonia-N	0.05	mg/L	
S	W1918	96-0007	5/19	11:54		Total Phosphorus	0.059	mg/L	
S	W1918	96-0070	6/23	11:54		Total Phosphorus	0.18	mg/L	
S	W1918	96-0277	7/28	13:05		Total Phosphorus	0.12	mg/L	
S	W1918	96-0480	9/1	12:10		Total Phosphorus	0.11	mg/L	
S	W1918	96-0529	10/6	12:09		Total Phosphorus	0.16	mg/L	
S	W1918	96-0007	5/19	11:54		*E. coli*	10	CFU/100mL	
S	W1918	96-0070	6/23	11:54		*E. coli*	5300	CFU/100mL	
S	W1918	96-0277	7/28	13:05		*E. coli*	40	CFU/100mL	
S	W1918	96-0407	8/13	11:37		*E. coli*	1600	CFU/100mL	
S	W1918	96-0480	9/1	12:10		*E. coli*	380	CFU/100mL	
S	W1918	96-0529	10/6	12:09		*E. coli*	6100	CFU/100mL	
S	W1918	96-0007	5/19	11:54		True Color	<15	PCU	
S	W1918	96-0070	6/23	11:54		True Color	55	PCU	
S	W1918	96-0277	7/28	13:05		True Color	38	PCU	
S	W1918	96-0480	9/1	12:10		True Color	25	PCU	
S	W1918	96-0529	10/6	12:09		True Color	23	PCU	
S	W1918	96-0007	5/19	11:54		Turbidity	2.5	NTU	b
S	W1918	96-0070	6/23	11:54		Turbidity	10.0	NTU	
S	W1918	96-0277	7/28	13:05		Turbidity	4.1	NTU	
S	W1918	96-0480	9/1	12:10		Turbidity	5.1	NTU	
S	W1918	96-0529	10/6	12:09		Turbidity	6.3	NTU	
S	W1919	96-0008	5/19	12:11		Total Nitrogen	0.69	mg/L	
S	W1919	96-0071	6/23	12:20		Total Nitrogen	0.72	mg/L	
S	W1919	96-0278	7/28	13:32		Total Nitrogen	0.61	mg/L	
S	W1919	96-0481	9/1	12:37		Total Nitrogen	0.73	mg/L	
S	W1919	96-0530	10/6	12:24		Total Nitrogen	0.57	mg/L	
S	W1919	96-0008	5/19	12:11		Ammonia-N	0.04	mg/L	
S	W1919	96-0071	6/23	12:20		Ammonia-N	0.05	mg/L	
S	W1919	96-0278	7/28	13:32		Ammonia-N	0.04	mg/L	
S	W1919	96-0481	9/1	12:37		Ammonia-N	0.06	mg/L	
S	W1919	96-0530	10/6	12:24		Ammonia-N	0.04	mg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1919	96-0008	5/19	12:11		Total Phosphorus	0.032	mg/L	
S	W1919	96-0071	6/23	12:20		Total Phosphorus	0.11	mg/L	
S	W1919	96-0278	7/28	13:32		Total Phosphorus	0.056	mg/L	
S	W1919	96-0481	9/1	12:37		Total Phosphorus	0.081	mg/L	
S	W1919	96-0530	10/6	12:24		Total Phosphorus	0.064	mg/L	
S	W1919	96-0008	5/19	12:11		*E. coli*	<10	CFU/100mL	
S	W1919	96-0071	6/23	12:20		*E. coli*	1300	CFU/100mL	
S	W1919	96-0278	7/28	13:32		*E. coli*	<10	CFU/100mL	
S	W1919	96-0408	8/13	11:51		*E. coli*	1000	CFU/100mL	
S	W1919	96-0481	9/1	12:37		*E. coli*	220	CFU/100mL	
S	W1919	96-0530	10/6	12:24		*E. coli*	36	CFU/100mL	
S	W1919	96-0008	5/19	12:11		True Color	52	PCU	
S	W1919	96-0071	6/23	12:20		True Color	77	PCU	
S	W1919	96-0278	7/28	13:32		True Color	68	PCU	
S	W1919	96-0481	9/1	12:37		True Color	67	PCU	
S	W1919	96-0530	10/6	12:24		True Color	42	PCU	
S	W1919	96-0008	5/19	12:11		Turbidity	3.1	NTU	b
S	W1919	96-0071	6/23	12:20		Turbidity	12.0	NTU	
S	W1919	96-0278	7/28	13:32		Turbidity	5.4	NTU	
S	W1919	96-0481	9/1	12:37		Turbidity	6.9	NTU	
S	W1919	96-0530	10/6	12:24		Turbidity	6.9	NTU	
S	W1920	96-0009	5/19	12:18		Total Nitrogen	0.44	mg/L	
S	W1920	96-0072	6/23	12:34		Total Nitrogen	0.61	mg/L	
S	W1920	96-0279	7/28	13:43		Total Nitrogen	0.51	mg/L	
S	W1920	96-0482	9/1	12:47		Total Nitrogen	0.51	mg/L	
S	W1920	96-0531	10/6	12:35		Total Nitrogen	0.58	mg/L	
S	W1920	96-0009	5/19	12:18		Ammonia-N	<0.02	mg/L	
S	W1920	96-0072	6/23	12:34		Ammonia-N	0.10	mg/L	
S	W1920	96-0279	7/28	13:43		Ammonia-N	0.03	mg/L	
S	W1920	96-0482	9/1	12:47		Ammonia-N	0.04	mg/L	
S	W1920	96-0531	10/6	12:35		Ammonia-N	<0.02	mg/L	
S	W1920	96-0009	5/19	12:18		Total Phosphorus	0.034	mg/L	
S	W1920	96-0072	6/23	12:34		Total Phosphorus	0.043	mg/L	
S	W1920	96-0279	7/28	13:43		Total Phosphorus	0.034	mg/L	
S	W1920	96-0482	9/1	12:47		Total Phosphorus	0.030	mg/L	
S	W1920	96-0531	10/6	12:35		Total Phosphorus	0.020	mg/L	
S	W1920	96-0009	5/19	12:18		*E. coli*	30	CFU/100mL	
S	W1920	96-0072	6/23	12:34		*E. coli*	590	CFU/100mL	
S	W1920	96-0279	7/28	13:43		*E. coli*	<10	CFU/100mL	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1920	96-0409	8/13	11:59		*E. coli*	250	CFU/100mL	
S	W1920	96-0482	9/1	12:47		*E. coli*	70	CFU/100mL	
S	W1920	96-0531	10/6	12:35		*E. coli*	120	CFU/100mL	
S	W1920	96-0009	5/19	12:18		True Color	<15	PCU	
S	W1920	96-0072	6/23	12:34		True Color	25	PCU	
S	W1920	96-0279	7/28	13:43		True Color	<15	PCU	
S	W1920	96-0482	9/1	12:47		True Color	<15	PCU	
S	W1920	96-0531	10/6	12:35		True Color	<15	PCU	
S	W1920	96-0009	5/19	12:18		Turbidity	2.1	NTU	b
S	W1920	96-0072	6/23	12:34		Turbidity	3.9	NTU	
S	W1920	96-0279	7/28	13:43		Turbidity	1.8	NTU	
S	W1920	96-0482	9/1	12:47		Turbidity	1.6	NTU	
S	W1920	96-0531	10/6	12:35		Turbidity	1.1	NTU	
S	W1914	96-0030	5/19	12:32		Total Nitrogen	2.1	mg/L	
S	W1914	96-0093	6/23	13:35		Total Nitrogen	2.1	mg/L	
S	W1914	96-0300	7/28	14:25		Total Nitrogen	1.9	mg/L	
S	W1914	96-0503	9/1	13:02		Total Nitrogen	1.7	mg/L	
S	W1914	96-0552	10/6	13:22		Total Nitrogen	1.7	mg/L	
S	W1914	96-0030	5/19	12:32		Ammonia-N	<0.02	mg/L	
S	W1914	96-0093	6/23	13:35		Ammonia-N	0.05	mg/L	
S	W1914	96-0300	7/28	14:25		Ammonia-N	0.07	mg/L	
S	W1914	96-0503	9/1	13:02		Ammonia-N	0.07	mg/L	
S	W1914	96-0552	10/6	13:22		Ammonia-N	0.08	mg/L	
S	W1914	96-0030	5/19	12:32		Total Phosphorus	0.008	mg/L	
S	W1914	96-0093	6/23	13:35		Total Phosphorus	0.030	mg/L	
S	W1914	96-0300	7/28	14:25		Total Phosphorus	0.016	mg/L	
S	W1914	96-0503	9/1	13:02		Total Phosphorus	0.019	mg/L	
S	W1914	96-0552	10/6	13:22		Total Phosphorus	0.018	mg/L	
S	W1914	96-0030	5/19	12:32		*E. coli*	20	CFU/100mL	
S	W1914	96-0093	6/23	13:35		*E. coli*	610	CFU/100mL	
S	W1914	96-0300	7/28	14:25		*E. coli*	130	CFU/100mL	
S	W1914	96-0430	8/13	12:57		*E. coli*	1900	CFU/100mL	
S	W1914	96-0503	9/1	13:02		*E. coli*	200	CFU/100mL	
S	W1914	96-0552	10/6	13:22		*E. coli*	220	CFU/100mL	
S	W1914	96-0030	5/19	12:32		True Color	28	PCU	
S	W1914	96-0093	6/23	13:35		True Color	99	PCU	
S	W1914	96-0300	7/28	14:25		True Color	45	PCU	
S	W1914	96-0503	9/1	13:02		True Color	40	PCU	
S	W1914	96-0552	10/6	13:22		True Color	36	PCU	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1914	96-0030	5/19	12:32		Turbidity	1.0	NTU	
S	W1914	96-0093	6/23	13:35		Turbidity	3.1	NTU	
S	W1914	96-0300	7/28	14:25		Turbidity	2.4	NTU	
S	W1914	96-0503	9/1	13:02		Turbidity	3.1	NTU	b
S	W1914	96-0552	10/6	13:22		Turbidity	2.4	NTU	
S	W1925	96-0031	5/19	12:49		Total Nitrogen	1.1	mg/L	
S	W1925	96-0094	6/23	13:58		Total Nitrogen	1.1	mg/L	
S	W1925	96-0301	7/28	14:45		Total Nitrogen	1.2	mg/L	
S	W1925	96-0504	9/1	13:25		Total Nitrogen	1.1	mg/L	
S	W1925	96-0553	10/6	13:40		Total Nitrogen	1.1	mg/L	
S	W1925	96-0031	5/19	12:49		Ammonia-N	0.10	mg/L	
S	W1925	96-0094	6/23	13:58		Ammonia-N	0.10	mg/L	
S	W1925	96-0301	7/28	14:45		Ammonia-N	0.12	mg/L	
S	W1925	96-0504	9/1	13:25		Ammonia-N	0.11	mg/L	
S	W1925	96-0553	10/6	13:40		Ammonia-N	0.10	mg/L	
S	W1925	96-0031	5/19	12:49		Total Phosphorus	<0.005	mg/L	
S	W1925	96-0094	6/23	13:58		Total Phosphorus	0.008	mg/L	
S	W1925	96-0301	7/28	14:45		Total Phosphorus	0.006	mg/L	
S	W1925	96-0504	9/1	13:25		Total Phosphorus	0.008	mg/L	
S	W1925	96-0553	10/6	13:40		Total Phosphorus	0.005	mg/L	
S	W1925	96-0031	5/19	12:49		*E. coli*	<10	CFU/100mL	
S	W1925	96-0094	6/23	13:58		*E. coli*	200	CFU/100mL	
S	W1925	96-0301	7/28	14:45		*E. coli*	<10	CFU/100mL	
S	W1925	96-0431	8/13	13:16		*E. coli*	490	CFU/100mL	
S	W1925	96-0504	9/1	13:25		*E. coli*	160	CFU/100mL	
S	W1925	96-0553	10/6	13:40		*E. coli*	<10	CFU/100mL	
S	W1925	96-0031	5/19	12:49		True Color	<15	PCU	
S	W1925	96-0094	6/23	13:58		True Color	<15	PCU	
S	W1925	96-0301	7/28	14:45		True Color	<15	PCU	
S	W1925	96-0504	9/1	13:25		True Color	<15	PCU	
S	W1925	96-0553	10/6	13:40		True Color	<15	PCU	
S	W1925	96-0031	5/19	12:49		Turbidity	<0.5	NTU	
S	W1925	96-0094	6/23	13:58		Turbidity	1.6	NTU	
S	W1925	96-0301	7/28	14:45		Turbidity	1.4	NTU	
S	W1925	96-0504	9/1	13:25		Turbidity	1.3	NTU	b
S	W1925	96-0553	10/6	13:40		Turbidity	0.7	NTU	
S	W1924	96-0032	5/19	13:07		Total Nitrogen	1.3	mg/L	
S	W1924	96-0095	6/23	14:20		Total Nitrogen	1.2	mg/L	
S	W1924	96-0302	7/28	15:10		Total Nitrogen	1.3	mg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1924	96-0505	9/1	13:42		Total Nitrogen	1.2	mg/L	
S	W1924	96-0554	10/6	14:00		Total Nitrogen	1.1	mg/L	
S	W1924	96-0032	5/19	13:07		Ammonia-N	0.02	mg/L	
S	W1924	96-0095	6/23	14:20		Ammonia-N	0.07	mg/L	
S	W1924	96-0302	7/28	15:10		Ammonia-N	0.08	mg/L	
S	W1924	96-0505	9/1	13:42		Ammonia-N	0.09	mg/L	
S	W1924	96-0554	10/6	14:00		Ammonia-N	0.06	mg/L	
S	W1924	96-0032	5/19	13:07		Total Phosphorus	0.023	mg/L	
S	W1924	96-0095	6/23	14:20		Total Phosphorus	0.049	mg/L	
S	W1924	96-0302	7/28	15:10		Total Phosphorus	0.031	mg/L	
S	W1924	96-0505	9/1	13:42		Total Phosphorus	0.025	mg/L	
S	W1924	96-0554	10/6	14:00		Total Phosphorus	0.017	mg/L	
S	W1924	96-0032	5/19	13:07		*E. coli*	<10	CFU/100mL	
S	W1924	96-0095	6/23	14:20		*E. coli*	2200	CFU/100mL	
S	W1924	96-0302	7/28	15:10		*E. coli*	70	CFU/100mL	
S	W1924	96-0432	8/13	13:35		*E. coli*	1100	CFU/100mL	
S	W1924	96-0505	9/1	13:42		*E. coli*	220	CFU/100mL	
S	W1924	96-0554	10/6	14:00		*E. coli*	170	CFU/100mL	
S	W1924	96-0032	5/19	13:07		True Color	96	PCU	
S	W1924	96-0095	6/23	14:20		True Color	155	PCU	
S	W1924	96-0302	7/28	15:10		True Color	175	PCU	
S	W1924	96-0505	9/1	13:42		True Color	140	PCU	
S	W1924	96-0554	10/6	14:00		True Color	130	PCU	
S	W1924	96-0032	5/19	13:07		Turbidity	3.7	NTU	
S	W1924	96-0095	6/23	14:20		Turbidity	9.3	NTU	
S	W1924	96-0302	7/28	15:10		Turbidity	5.4	NTU	
S	W1924	96-0505	9/1	13:42		Turbidity	3.8	NTU	b
S	W1924	96-0554	10/6	14:00		Turbidity	1.9	NTU	
S	W1921	96-0013	5/19	13:17		Total Nitrogen	0.79	mg/L	
S	W1921	96-0076	6/23	13:46		Total Nitrogen	1.0	mg/L	
S	W1921	96-0283	7/28	14:59		Total Nitrogen	0.98	mg/L	
S	W1921	96-0486	9/1	13:40		Total Nitrogen	0.81	mg/L	
S	W1921	96-0535	10/6	13:49		Total Nitrogen	0.60	mg/L	
S	W1921	96-0013	5/19	13:17		Ammonia-N	0.05	mg/L	
S	W1921	96-0076	6/23	13:46		Ammonia-N	0.11	mg/L	
S	W1921	96-0283	7/28	14:59		Ammonia-N	0.12	mg/L	
S	W1921	96-0486	9/1	13:40		Ammonia-N	0.10	mg/L	
S	W1921	96-0535	10/6	13:49		Ammonia-N	0.04	mg/L	
S	W1921	96-0013	5/19	13:17		Total Phosphorus	0.075	mg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1921	96-0076	6/23	13:46		Total Phosphorus	0.13	mg/L	
S	W1921	96-0283	7/28	14:59		Total Phosphorus	0.13	mg/L	
S	W1921	96-0486	9/1	13:40		Total Phosphorus	0.10	mg/L	
S	W1921	96-0535	10/6	13:49		Total Phosphorus	0.082	mg/L	
S	W1921	96-0013	5/19	13:17		*E. coli*	40	CFU/100mL	
S	W1921	96-0076	6/23	13:46		*E. coli*	420	CFU/100mL	
S	W1921	96-0283	7/28	14:59		*E. coli*	240	CFU/100mL	
S	W1921	96-0413	8/13	13:16		*E. coli*	1000	CFU/100mL	
S	W1921	96-0486	9/1	13:40		*E. coli*	480	CFU/100mL	
S	W1921	96-0535	10/6	13:49		*E. coli*	280	CFU/100mL	
S	W1921	96-0013	5/19	13:17		True Color	190	PCU	
S	W1921	96-0076	6/23	13:46		True Color	240	PCU	
S	W1921	96-0283	7/28	14:59		True Color	220	PCU	
S	W1921	96-0486	9/1	13:40		True Color	175	PCU	
S	W1921	96-0535	10/6	13:49		True Color	150	PCU	
S	W1921	96-0013	5/19	13:17		Turbidity	6.6	NTU	b
S	W1921	96-0076	6/23	13:46		Turbidity	17.5	NTU	
S	W1921	96-0283	7/28	14:59		Turbidity	15.0	NTU	
S	W1921	96-0486	9/1	13:40		Turbidity	6.9	NTU	
S	W1921	96-0535	10/6	13:49		Turbidity	4.9	NTU	
S	W1923	96-0033	5/19	13:17		Total Nitrogen	1.1	mg/L	
S	W1923	96-0096	6/23	14:34		Total Nitrogen	1.1	mg/L	
S	W1923	96-0303	7/28	15:21		Total Nitrogen	1.3	mg/L	
S	W1923	96-0506	9/1	14:18		Total Nitrogen	1.2	mg/L	
S	W1923	96-0555	10/6	14:14		Total Nitrogen	1.1	mg/L	
S	W1923	96-0033	5/19	13:17		Ammonia-N	0.09	mg/L	
S	W1923	96-0096	6/23	14:34		Ammonia-N	0.16	mg/L	
S	W1923	96-0303	7/28	15:21		Ammonia-N	0.32	mg/L	
S	W1923	96-0506	9/1	14:18		Ammonia-N	0.25	mg/L	
S	W1923	96-0555	10/6	14:14		Ammonia-N	0.13	mg/L	
S	W1923	96-0033	5/19	13:17		Total Phosphorus	0.11	mg/L	
S	W1923	96-0096	6/23	14:34		Total Phosphorus	0.14	mg/L	
S	W1923	96-0303	7/28	15:21		Total Phosphorus	0.20	mg/L	
S	W1923	96-0506	9/1	14:18		Total Phosphorus	0.14	mg/L	
S	W1923	96-0555	10/6	14:14		Total Phosphorus	0.13	mg/L	
S	W1923	96-0033	5/19	13:17		*E. coli*	350	CFU/100mL	
S	W1923	96-0096	6/23	14:34		*E. coli*	1200	CFU/100mL	
S	W1923	96-0303	7/28	15:21		*E. coli*	120	CFU/100mL	
S	W1923	96-0433	8/13	13:19		*E. coli*	1500	CFU/100mL	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1923	96-0506	9/1	14:18		*E. coli*	210	CFU/100mL	
S	W1923	96-0555	10/6	14:14		*E. coli*	81	CFU/100mL	
S	W1923	96-0033	5/19	13:17		True Color	77	PCU	
S	W1923	96-0096	6/23	14:34		True Color	155	PCU	
S	W1923	96-0303	7/28	15:21		True Color	195	PCU	
S	W1923	96-0506	9/1	14:18		True Color	120	PCU	
S	W1923	96-0555	10/6	14:14		True Color	125	PCU	
S	W1923	96-0033	5/19	13:17		Turbidity	4.1	NTU	
S	W1923	96-0096	6/23	14:34		Turbidity	6.6	NTU	
S	W1923	96-0303	7/28	15:21		Turbidity	7.0	NTU	
S	W1923	96-0506	9/1	14:18		Turbidity	4.2	NTU	b
S	W1923	96-0555	10/6	14:14		Turbidity	4.5	NTU	
S	W1926	96-0014	5/19	13:26		Total Nitrogen	0.53	mg/L	
S	W1926	96-0077	6/23	13:58		Total Nitrogen	1.0	mg/L	
S	W1926	96-0284	7/28	15:15		Total Nitrogen	0.89	mg/L	
S	W1926	96-0487	9/1	14:02		Total Nitrogen	0.94	mg/L	
S	W1926	96-0536	10/6	14:01		Total Nitrogen	1.1	mg/L	
S	W1926	96-0014	5/19	13:26		Ammonia-N	<0.02	mg/L	
S	W1926	96-0077	6/23	13:58		Ammonia-N	0.10	mg/L	
S	W1926	96-0284	7/28	15:15		Ammonia-N	0.13	mg/L	
S	W1926	96-0487	9/1	14:02		Ammonia-N	0.18	mg/L	
S	W1926	96-0536	10/6	14:01		Ammonia-N	<0.02	mg/L	
S	W1926	96-0014	5/19	13:26		Total Phosphorus	0.023	mg/L	
S	W1926	96-0077	6/23	13:58		Total Phosphorus	0.054	mg/L	
S	W1926	96-0284	7/28	15:15		Total Phosphorus	0.036	mg/L	
S	W1926	96-0487	9/1	14:02		Total Phosphorus	0.064	mg/L	
S	W1926	96-0536	10/6	14:01		Total Phosphorus	0.074	mg/L	
S	W1926	96-0014	5/19	13:26		*E. coli*	<10	CFU/100mL	
S	W1926	96-0077	6/23	13:58		*E. coli*	340	CFU/100mL	
S	W1926	96-0284	7/28	15:15		*E. coli*	10	CFU/100mL	
S	W1926	96-0414	8/13	13:26		*E. coli*	340	CFU/100mL	
S	W1926	96-0487	9/1	14:02		*E. coli*	70	CFU/100mL	
S	W1926	96-0536	10/6	14:01		*E. coli*	36	CFU/100mL	
S	W1926	96-0014	5/19	13:26		True Color	16	PCU	
S	W1926	96-0077	6/23	13:58		True Color	30	PCU	
S	W1926	96-0284	7/28	15:15		True Color	31	PCU	
S	W1926	96-0487	9/1	14:02		True Color	29	PCU	
S	W1926	96-0536	10/6	14:01		True Color	41	PCU	
S	W1926	96-0014	5/19	13:26		Turbidity	0.8	NTU	b

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1926	96-0077	6/23	13:58		Turbidity	3.4	NTU	
S	W1926	96-0284	7/28	15:15		Turbidity	1.2	NTU	
S	W1926	96-0487	9/1	14:02		Turbidity	2.5	NTU	
S	W1926	96-0536	10/6	14:01		Turbidity	5.4	NTU	
S	W1277	96-0214	6/24	14:26		Total Nitrogen	0.33	mg/L	d
S	W1277	96-0337	9/3	13:19		Total Nitrogen	0.29	mg/L	
S	W1277	96-0383	9/30	16:08		Total Nitrogen	0.24	mg/L	
S	W1277	96-0214	6/24	14:26		Ammonia-N	0.02	mg/L	
S	W1277	96-0337	9/3	13:19		Ammonia-N	0.02	mg/L	
S	W1277	96-0383	9/30	16:08		Ammonia-N	0.02	mg/L	
S	W1277	96-0214	6/24	14:26		Total Phosphorus	0.051	mg/L	
S	W1277	96-0337	9/3	13:19		Total Phosphorus	0.052	mg/L	
S	W1277	96-0383	9/30	16:08		Total Phosphorus	0.046	mg/L	
S	W1277	96-0214	6/24	14:26		True Color	145	PCU	
S	W1277	96-0337	9/3	13:19		True Color	130	PCU	
S	W1277	96-0383	9/30	16:08		True Color	105	PCU	d
S	W1277	96-0214	6/24	14:26		Turbidity	1.8	NTU	
S	W1277	96-0337	9/3	13:19		Turbidity	1.4	NTU	
S	W1277	96-0383	9/30	16:08		Turbidity	1.7	NTU	
S	W1277	96-0214	6/24	14:26		Hardness	<20	mg/L	
S	W1277	96-0337	9/3	13:19		Hardness	<20	mg/L	
S	W1239	96-0226	6/25	15:10		Total Nitrogen	1.6	mg/L	d
S	W1239	96-0226	6/25	15:10		Ammonia-N	0.20	mg/L	
S	W1239	96-0226	6/25	15:10		Total Phosphorus	0.20	mg/L	d
S	W1239	96-0226	6/25	15:10		True Color	83	PCU	
S	W1239	96-0226	6/25	15:10		Turbidity	5.0	NTU	
S	W1239	96-0226	6/25	15:10		Hardness	<20	mg/L	
S	W2123	96-0239	7/29	16:13		Total Nitrogen	0.60	mg/L	
S	W2123	96-0239	7/29	16:13		Ammonia-N	0.05	mg/L	
S	W2123	96-0239	7/29	16:13		Total Phosphorus	0.048	mg/L	
S	W2123	96-0239	7/29	16:13		True Color	73	PCU	
S	W2123	96-0239	7/29	16:13		Turbidity	2.1	NTU	
S	W2123	96-0239	7/29	16:13		Hardness	<20	mg/L	
S	W1985	96-0304	7/29	16:57		Total Nitrogen	0.32	mg/L	
S	W1985	96-0351	9/9	11:50		Total Nitrogen	0.25	mg/L	
S	W1985	96-0380	9/30	13:10		Total Nitrogen	0.35	mg/L	
S	W1985	96-0304	7/29	16:57		Ammonia-N	0.05	mg/L	
S	W1985	96-0351	9/9	11:50		Ammonia-N	0.05	mg/L	
S	W1985	96-0380	9/30	13:10		Ammonia-N	0.03	mg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
S	W1985	96-0304	7/29	16:57		Total Phosphorus	0.084	mg/L	
S	W1985	96-0351	9/9	11:50		Total Phosphorus	0.064	mg/L	
S	W1985	96-0380	9/30	13:10		Total Phosphorus	0.070	mg/L	
S	W1985	96-0304	7/29	16:57		True Color	72	PCU	
S	W1985	96-0351	9/9	11:50		True Color	42	PCU	
S	W1985	96-0380	9/30	13:10		True Color	105	PCU	d
S	W1985	96-0304	7/29	16:57		Turbidity	1.2	NTU	
S	W1985	96-0351	9/9	11:50		Turbidity	1.5	NTU	d
S	W1985	96-0380	9/30	13:10		Turbidity	1.4	NTU	
S	W1985	96-0304	7/29	16:57		Hardness	<20	mg/L	
S	W1985	96-0351	9/9	11:50		Hardness	<20	mg/L	
S	W1986	96-0305	7/29	17:05		Total Nitrogen	0.32	mg/L	
S	W1986	96-0305	7/29	17:05		Ammonia-N	0.08	mg/L	
S	W1986	96-0305	7/29	17:05		Total Phosphorus	0.25	mg/L	
S	W1986	96-0305	7/29	17:05		True Color	62	PCU	
S	W1986	96-0305	7/29	17:05		Turbidity	4.4	NTU	
S	W1986	96-0305	7/29	17:05		Hardness	<20	mg/L	
S	W0744	96-0163	9/25	17:00		Total Nitrogen	0.65	mg/L	f, m
S	W0744	96-0164	9/25	17:05		Total Nitrogen	1.3	mg/L	f, m
S	W0744	96-0163	9/25	17:00		Total Phosphorus	0.10	mg/L	f, m
S	W0744	96-0164	9/25	17:05		Total Phosphorus	0.45	mg/L	f, m
S	W2124	96-0393	10/1	14:01		Total Nitrogen	0.31	mg/L	
S	W2124	96-0393	10/1	14:01		Ammonia-N	##	mg/L	h
S	W2124	96-0393	10/1	14:01		Total Phosphorus	0.039	mg/L	
L	W0739	96-0228	7/29	11:21	**	Total Nitrogen	1.1	mg/L	
L	W0739	96-0230	7/29	11:38	2.2	Total Nitrogen	1.1	mg/L	
L	W0739	96-0347	9/9	13:00	**	Total Nitrogen	1.0	mg/L	
L	W0739	96-0348	9/9	13:11	2.0	Total Nitrogen	1.1	mg/L	
L	W0739	96-0370	9/30	10:28	**	Total Nitrogen	0.80	mg/L	
L	W0739	96-0372	9/30	10:36	2.0	Total Nitrogen	0.82	mg/L	
L	W0739	96-0228	7/29	11:21	**	Ammonia-N	<0.02	mg/L	
L	W0739	96-0347	9/9	13:00	**	Ammonia-N	<0.02	mg/L	
L	W0739	96-0370	9/30	10:28	**	Ammonia-N	<0.02	mg/L	
L	W0739	96-0228	7/29	11:21	**	Total Phosphorus	0.083	mg/L	
L	W0739	96-0230	7/29	11:38	2.2	Total Phosphorus	0.086	mg/L	
L	W0739	96-0347	9/9	13:00	**	Total Phosphorus	0.12	mg/L	
L	W0739	96-0348	9/9	13:11	2.0	Total Phosphorus	0.13	mg/L	
L	W0739	96-0370	9/30	10:28	**	Total Phosphorus	0.095	mg/L	
L	W0739	96-0372	9/30	10:36	2.0	Total Phosphorus	0.096	mg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
L	W0739	96-0228	7/29	11:21	**	True Color	20	PCU	d
L	W0739	96-0347	9/9	13:00	**	True Color	16	PCU	
L	W0739	96-0370	9/30	10:28	**	True Color	##	PCU	d
L	W0739	96-0228	7/29	11:21	**	Turbidity	29.0	NTU	
L	W0739	96-0347	9/9	13:00	**	Turbidity	35.5	NTU	d
L	W0739	96-0370	9/30	10:28	**	Turbidity	25.0	NTU	
L	W0739	96-0228	7/29	11:21	**	Hardness	<20	mg/L	
L	W0739	96-0233	7/29	11:40	0.0-2.4	Chlorophyll a	50.0	mg/m3	
L	W0739	96-0349	9/9	13:15	0.0-1.2	Chlorophyll a	50.0	mg/m3	
L	W0746	96-0197	6/24	12:00	**	Total Nitrogen	0.43	mg/L	
L	W0746	96-0199	6/24	12:24	2.0	Total Nitrogen	##	mg/L	d
L	W0746	96-0330	9/3	11:46	**	Total Nitrogen	0.80	mg/L	
L	W0746	96-0331	9/3	11:58	1.8	Total Nitrogen	0.98	mg/L	
L	W0746	96-0378	9/30	16:35	**	Total Nitrogen	0.86	mg/L	
L	W0746	96-0379	9/30	16:28	**	Total Nitrogen	0.87	mg/L	
L	W0746	96-0198	6/24	12:02	**	Nitrate/Nitrite-N	##	mg/L	r
L	W0746	96-0197	6/24	12:00	**	Ammonia-N	<0.02	mg/L	
L	W0746	96-0330	9/3	11:46	**	Ammonia-N	<0.02	mg/L	
L	W0746	96-0379	9/30	16:28	**	Ammonia-N	<0.02	mg/L	
L	W0746	96-0197	6/24	12:00	**	Total Phosphorus	0.039	mg/L	
L	W0746	96-0199	6/24	12:24	2.0	Total Phosphorus	0.046	mg/L	d
L	W0746	96-0330	9/3	11:46	**	Total Phosphorus	0.053	mg/L	
L	W0746	96-0331	9/3	11:58	1.8	Total Phosphorus	0.089	mg/L	
L	W0746	96-0378	9/30	16:35	**	Total Phosphorus	0.082	mg/L	
L	W0746	96-0379	9/30	16:28	**	Total Phosphorus	0.072	mg/L	
L	W0746	96-0197	6/24	12:00	**	True Color	21	PCU	
L	W0746	96-0330	9/3	11:46	**	True Color	<15	PCU	
L	W0746	96-0379	9/30	16:28	**	True Color	19	PCU	d
L	W0746	96-0197	6/24	12:00	**	Turbidity	3.9	NTU	
L	W0746	96-0330	9/3	11:46	**	Turbidity	4.7	NTU	
L	W0746	96-0379	9/30	16:28	**	Turbidity	10.5	NTU	
L	W0746	96-0197	6/24	12:00	**	Hardness	<20	mg/L	
L	W0746	96-0202	6/24	12:48	0.0-2.0	Chlorophyll a	20.8	mg/m3	
L	W0746	96-0332	9/3	12:15	0.0-1.8	Chlorophyll a	33.0	mg/m3	d
L	W0747	96-0205	6/24	13:45	**	Total Nitrogen	0.35	mg/L	d
L	W0747	96-0206	6/24	13:51	7.5	Total Nitrogen	0.38	mg/L	d
L	W0747	96-0333	9/3	12:38	**	Total Nitrogen	0.39	mg/L	
L	W0747	96-0334	9/3	12:52	7.4	Total Nitrogen	0.50	mg/L	
L	W0747	96-0381	9/30	15:32	**	Total Nitrogen	0.36	mg/L	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
L	W0747	96-0382	9/30	15:44	7.8	Total Nitrogen	0.45	mg/L	
L	W0747	96-0205	6/24	13:45	**	Ammonia-N	0.06	mg/L	
L	W0747	96-0333	9/3	12:38	**	Ammonia-N	0.02	mg/L	
L	W0747	96-0381	9/30	15:32	**	Ammonia-N	<0.02	mg/L	
L	W0747	96-0205	6/24	13:45	**	Total Phosphorus	0.030	mg/L	
L	W0747	96-0206	6/24	13:51	7.5	Total Phosphorus	0.038	mg/L	
L	W0747	96-0333	9/3	12:38	**	Total Phosphorus	0.021	mg/L	
L	W0747	96-0334	9/3	12:52	7.4	Total Phosphorus	0.031	mg/L	
L	W0747	96-0381	9/30	15:32	**	Total Phosphorus	0.028	mg/L	
L	W0747	96-0382	9/30	15:44	7.8	Total Phosphorus	0.047	mg/L	
L	W0747	96-0205	6/24	13:45	**	True Color	<15	PCU	
L	W0747	96-0333	9/3	12:38	**	True Color	<15	PCU	
L	W0747	96-0381	9/30	15:32	**	True Color	<15	PCU	d
L	W0747	96-0205	6/24	13:45	**	Turbidity	2.1	NTU	
L	W0747	96-0333	9/3	12:38	**	Turbidity	2.3	NTU	
L	W0747	96-0381	9/30	15:32	**	Turbidity	2.0	NTU	
L	W0747	96-0205	6/24	13:45	**	Hardness	<20	mg/L	
L	W0747	96-0335	9/3	12:58	0.0-5.4	Chlorophyll a	15.4	mg/m3	d
L	W0748	96-0208	6/25	11:59	**	Total Nitrogen	0.33	mg/L	d
L	W0748	96-0209	6/25	12:07	2.8	Total Nitrogen	0.70	mg/L	d
L	W0748	96-0319	9/2	15:48	**	Total Nitrogen	0.38	mg/L	
L	W0748	96-0320	9/2	15:54	3.0	Total Nitrogen	0.46	mg/L	
L	W0748	96-0389	10/1	11:28	**	Total Nitrogen	0.31	mg/L	
L	W0748	96-0390	10/1	11:33	3.0	Total Nitrogen	0.31	mg/L	
L	W0748	96-0208	6/25	11:59	**	Ammonia-N	<0.02	mg/L	
L	W0748	96-0319	9/2	15:48	**	Ammonia-N	<0.02	mg/L	
L	W0748	96-0389	10/1	11:28	**	Ammonia-N	<0.02	mg/L	
L	W0748	96-0208	6/25	11:59	**	Total Phosphorus	0.028	mg/L	d
L	W0748	96-0209	6/25	12:07	2.8	Total Phosphorus	0.070	mg/L	d
L	W0748	96-0319	9/2	15:48	**	Total Phosphorus	0.029	mg/L	
L	W0748	96-0320	9/2	15:54	3.0	Total Phosphorus	0.040	mg/L	
L	W0748	96-0389	10/1	11:28	**	Total Phosphorus	0.026	mg/L	
L	W0748	96-0390	10/1	11:33	3.0	Total Phosphorus	0.023	mg/L	
L	W0748	96-0208	6/25	11:59	**	True Color	16	PCU	
L	W0748	96-0319	9/2	15:48	**	True Color	<15	PCU	
L	W0748	96-0389	10/1	11:28	**	True Color	27	PCU	
L	W0748	96-0208	6/25	11:59	**	Turbidity	1.9	NTU	
L	W0748	96-0319	9/2	15:48	**	Turbidity	2.3	NTU	
L	W0748	96-0389	10/1	11:28	**	Turbidity	1.9	NTU	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
L	W0748	96-0208	6/25	11:59	**	Hardness	<20	mg/L	
L	W0748	96-0210	6/25	12:25	0.0-3.0	Chlorophyll a	27.1	mg/m3	
L	W0748	96-0321	9/2	15:50	0.0-3.0	Chlorophyll a	11.5	mg/m3	
L	W1214	96-0223	7/29	15:20	**	Total Nitrogen	0.67	mg/L	
L	W1214	96-0224	7/29	15:29	10.5	Total Nitrogen	1.1	mg/L	
L	W1214	96-0339	9/9	9:34	**	Total Nitrogen	0.63	mg/L	
L	W1214	96-0341	9/9	9:38	9.5	Total Nitrogen	0.68	mg/L	
L	W1214	96-0375	9/30	12:00	**	Total Nitrogen	0.53	mg/L	
L	W1214	96-0376	9/30	12:20	10.3	Total Nitrogen	0.50	mg/L	
L	W1214	96-0223	7/29	15:20	**	Ammonia-N	0.02	mg/L	
L	W1214	96-0339	9/9	9:34	**	Ammonia-N	0.09	mg/L	
L	W1214	96-0375	9/30	12:00	**	Ammonia-N	0.03	mg/L	
L	W1214	96-0376	9/30	12:20	10.3	Ammonia-N	0.04	mg/L	
L	W1214	96-0223	7/29	15:20	**	Total Phosphorus	0.047	mg/L	
L	W1214	96-0224	7/29	15:29	10.5	Total Phosphorus	0.21	mg/L	
L	W1214	96-0339	9/9	9:34	**	Total Phosphorus	0.033	mg/L	
L	W1214	96-0341	9/9	9:38	9.5	Total Phosphorus	0.040	mg/L	
L	W1214	96-0375	9/30	12:00	**	Total Phosphorus	0.031	mg/L	
L	W1214	96-0376	9/30	12:20	10.3	Total Phosphorus	0.031	mg/L	
L	W1214	96-0223	7/29	15:20	**	True Color	29	PCU	
L	W1214	96-0339	9/9	9:34	**	True Color	<15	PCU	
L	W1214	96-0375	9/30	12:00	**	True Color	29	PCU	d
L	W1214	96-0223	7/29	15:20	**	Turbidity	6.0	NTU	
L	W1214	96-0339	9/9	9:34	**	Turbidity	##	NTU	d
L	W1214	96-0375	9/30	12:00	**	Turbidity	4.5	NTU	
L	W1214	96-0223	7/29	15:20	**	Hardness	<20	mg/L	
L	W1214	96-0225	7/29	14:50	0.0-6.3	Chlorophyll a	13.5	mg/m3	
L	W1214	96-0344	9/9	10:04	0.0-7.0	Chlorophyll a	21.5	mg/m3	
L	W1234	96-0215	6/25	9:08	**	Total Nitrogen	0.37	mg/L	
L	W1234	96-0217	6/25	9:21	10.0	Total Nitrogen	##	mg/L	d
L	W1234	96-0322	9/3	8:42	**	Total Nitrogen	0.32	mg/L	
L	W1234	96-0324	9/3	9:10	10.0	Total Nitrogen	1.9	mg/L	
L	W1234	96-0384	10/1	9:18	**	Total Nitrogen	0.31	mg/L	
L	W1234	96-0386	10/1	9:33	10.5	Total Nitrogen	3.1	mg/L	
L	W1234	96-0215	6/25	9:08	**	Ammonia-N	<0.02	mg/L	
L	W1234	96-0322	9/3	8:42	**	Ammonia-N	<0.02	mg/L	
L	W1234	96-0384	10/1	9:18	**	Ammonia-N	<0.02	mg/L	
L	W1234	96-0215	6/25	9:08	**	Total Phosphorus	0.014	mg/L	
L	W1234	96-0217	6/25	9:21	10.0	Total Phosphorus	##	mg/L	d

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
L	W1234	96-0322	9/3	8:42	**	Total Phosphorus	0.011	mg/L	
L	W1234	96-0324	9/3	9:10	10.0	Total Phosphorus	0.029	mg/L	
L	W1234	96-0384	10/1	9:18	**	Total Phosphorus	0.012	mg/L	
L	W1234	96-0386	10/1	9:33	10.5	Total Phosphorus	0.028	mg/L	
L	W1234	96-0215	6/25	9:08	**	True Color	<15	PCU	
L	W1234	96-0322	9/3	8:42	**	True Color	<15	PCU	
L	W1234	96-0384	10/1	9:18	**	True Color	<15	PCU	
L	W1234	96-0215	6/25	9:08	**	Turbidity	1.5	NTU	
L	W1234	96-0322	9/3	8:42	**	Turbidity	1.1	NTU	
L	W1234	96-0384	10/1	9:18	**	Turbidity	1.3	NTU	
L	W1234	96-0215	6/25	9:08	**	Hardness	22	mg/L	
L	W1234	96-0220	6/25	10:23	0.0-7.0	Chlorophyll a	13.2	mg/m3	
L	W1234	96-0327	9/3	10:04	0.0-7.0	Chlorophyll a	##	mg/m3	d
L	W1237	96-0211	6/25	13:55	**	Total Nitrogen	0.41	mg/L	d
L	W1237	96-0212	6/25	14:16	7.3	Total Nitrogen	0.54	mg/L	d
L	W1237	96-0315	9/2	13:13	**	Total Nitrogen	0.45	mg/L	
L	W1237	96-0316	9/2	13:23	6.8	Total Nitrogen	0.65	mg/L	
L	W1237	96-0391	10/1	13:18	**	Total Nitrogen	0.31	mg/L	
L	W1237	96-0392	10/1	13:26	7.5	Total Nitrogen	0.33	mg/L	
L	W1237	96-0211	6/25	13:55	**	Ammonia-N	0.15	mg/L	
L	W1237	96-0315	9/2	13:13	**	Ammonia-N	0.04	mg/L	
L	W1237	96-0391	10/1	13:18	**	Ammonia-N	<0.02	mg/L	
L	W1237	96-0211	6/25	13:55	**	Total Phosphorus	0.027	mg/L	d
L	W1237	96-0212	6/25	14:16	7.3	Total Phosphorus	0.042	mg/L	d
L	W1237	96-0315	9/2	13:13	**	Total Phosphorus	0.028	mg/L	
L	W1237	96-0316	9/2	13:23	6.8	Total Phosphorus	0.045	mg/L	
L	W1237	96-0391	10/1	13:18	**	Total Phosphorus	0.026	mg/L	
L	W1237	96-0392	10/1	13:26	7.5	Total Phosphorus	0.040	mg/L	
L	W1237	96-0211	6/25	13:55	**	True Color	<15	PCU	
L	W1237	96-0315	9/2	13:13	**	True Color	<15	PCU	
L	W1237	96-0391	10/1	13:18	**	True Color	<15	PCU	
L	W1237	96-0211	6/25	13:55	**	Turbidity	1.6	NTU	
L	W1237	96-0315	9/2	13:13	**	Turbidity	2.1	NTU	
L	W1237	96-0391	10/1	13:18	**	Turbidity	1.7	NTU	
L	W1237	96-0211	6/25	13:55	**	Hardness	<20	mg/L	
L	W1237	96-0213	6/25	14:10	0.0-7.0	Chlorophyll a	3.7	mg/m3	
L	W1237	96-0317	9/2	13:33	0.0-6.6	Chlorophyll a	15.1	mg/m3	
L	W1927	96-0006	5/19	11:25	**	*E. coli*	<10	CFU/100mL	
L	W1927	96-0069	6/23	11:16	**	*E. coli*	<10	CFU/100mL	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
L	W1927	96-0276	7/28	11:20	**	*E. coli*	<10	CFU/100mL	
L	W1927	96-0406	8/13	11:00	**	*E. coli*	<10	CFU/100mL	
L	W1927	96-0479	9/1	11:37	**	*E. coli*	10	CFU/100mL	
L	W1927	96-0528	10/6	11:34	**	*E. coli*	<10	CFU/100mL	
L	W1928	96-0012	5/19	13:08	**	*E. coli*	<10	CFU/100mL	
L	W1928	96-0075	6/23	13:32	**	*E. coli*	20	CFU/100mL	
L	W1928	96-0282	7/28	14:42	**	*E. coli*	10	CFU/100mL	
L	W1928	96-0412	8/13	13:05	**	*E. coli*	30	CFU/100mL	
L	W1928	96-0485	9/1	13:37	**	*E. coli*	<10	CFU/100mL	
L	W1928	96-0534	10/6	13:36	**	*E. coli*	<10	CFU/100mL	
L	W1929	96-0011	5/19	12:56	**	*E. coli*	<10	CFU/100mL	
L	W1929	96-0074	6/23	13:21	**	*E. coli*	10	CFU/100mL	
L	W1929	96-0281	7/28	14:28	**	*E. coli*	<10	CFU/100mL	
L	W1929	96-0411	8/13	12:55	**	*E. coli*	<10	CFU/100mL	
L	W1929	96-0484	9/1	13:27	**	*E. coli*	30	CFU/100mL	
L	W1929	96-0533	10/6	13:18	**	*E. coli*	<10	CFU/100mL	
L	W1930	96-0015	5/19	13:40	**	*E. coli*	<10	CFU/100mL	
L	W1930	96-0078	6/23	14:10	**	*E. coli*	10	CFU/100mL	
L	W1930	96-0285	7/28	15:26	**	*E. coli*	10	CFU/100mL	
L	W1930	96-0415	8/13	13:38	**	*E. coli*	20	CFU/100mL	
L	W1930	96-0488	9/1	14:14	**	*E. coli*	50	CFU/100mL	
L	W1930	96-0537	10/6	14:12	**	*E. coli*	36	CFU/100mL	
L	W1980	96-0010	5/19	12:38	**	*E. coli*	<10	CFU/100mL	
L	W1980	96-0073	6/23	12:56	**	*E. coli*	<10	CFU/100mL	
L	W1980	96-0280	7/28	14:00	**	*E. coli*	<10	CFU/100mL	
L	W1980	96-0410	8/13	12:11	**	*E. coli*	100	CFU/100mL	
L	W1980	96-0483	9/1	13:04	**	*E. coli*	<10	CFU/100mL	
L	W1980	96-0532	10/6	12:52	**	*E. coli*	<10	CFU/100mL	
L	W1981	96-0571	10/7	13:25	**	Total Nitrogen	0.21	mg/L	f
L	W1981	96-0571	10/7	13:25	**	Ammonia-N	<0.02	mg/L	f
L	W1981	96-0571	10/7	13:25	**	Total Phosphorus	0.009	mg/L	f
L	W1981	96-0029	5/19	12:05	**	*E. coli*	<10	CFU/100mL	
L	W1981	96-0092	6/23	13:10	**	*E. coli*	30	CFU/100mL	
L	W1981	96-0299	7/28	13:58	**	*E. coli*	<10	CFU/100mL	
L	W1981	96-0429	8/13	12:25	**	*E. coli*	<10	CFU/100mL	
L	W1981	96-0502	9/1	12:32	**	*E. coli*	20	CFU/100mL	
L	W1981	96-0551	10/6	13:05	**	*E. coli*	<10	CFU/100mL	
L	W1982	96-0028	5/19	11:51	**	*E. coli*	<10	CFU/100mL	
L	W1982	96-0091	6/23	12:54	**	*E. coli*	30	CFU/100mL	

(S)tream or (L)ake Site	Unique ID	Sample OWMID	Sample Date	Sample Time	Sample Depth (m)	Analyte	Result	Units	Result Qualifiers
L	W1982	96-0298	7/28	13:20	**	*E. coli*	140	CFU/100mL	
L	W1982	96-0428	8/13	12:00	**	*E. coli*	<10	CFU/100mL	
L	W1982	96-0501	9/1	12:15	**	*E. coli*	30	CFU/100mL	
L	W1982	96-0550	10/6	12:50	**	*E. coli*	<10	CFU/100mL	
L	W1983	96-0027	5/19	11:39	**	*E. coli*	20	CFU/100mL	
L	W1983	96-0090	6/23	12:15	**	*E. coli*	230	CFU/100mL	
L	W1983	96-0297	7/28	12:55	**	*E. coli*	20	CFU/100mL	
L	W1983	96-0427	8/13	11:39	**	*E. coli*	20	CFU/100mL	
L	W1983	96-0500	9/1	12:01	**	*E. coli*	<10	CFU/100mL	
L	W1983	96-0549	10/6	12:38	**	*E. coli*	28	CFU/100mL	
L	W1984	96-0307	9/2	9:54	**	Total Nitrogen	0.20	mg/L	
L	W1984	96-0309	9/2	10:30	16.5	Total Nitrogen	1.7	mg/L	
L	W1984	96-0354	9/23	12:20	**	Total Nitrogen	0.20	mg/L	
L	W1984	96-0356	9/23	13:03	17.0	Total Nitrogen	2.3	mg/L	
L	W1984	96-0307	9/2	9:54	**	Ammonia-N	<0.02	mg/L	
L	W1984	96-0354	9/23	12:20	**	Ammonia-N	<0.02	mg/L	
L	W1984	96-0307	9/2	9:54	**	Total Phosphorus	0.008	mg/L	
L	W1984	96-0309	9/2	10:30	16.5	Total Phosphorus	0.41	mg/L	
L	W1984	96-0354	9/23	12:20	**	Total Phosphorus	0.007	mg/L	
L	W1984	96-0356	9/23	13:03	17.0	Total Phosphorus	0.56	mg/L	
L	W1984	96-0307	9/2	9:54	**	True Color	<15	PCU	
L	W1984	96-0354	9/23	12:20	**	True Color	<15	PCU	
L	W1984	96-0307	9/2	9:54	**	Turbidity	0.5	NTU	
L	W1984	96-0354	9/23	12:20	**	Turbidity	<0.5	NTU	
L	W1984	96-0354	9/23	12:20	**	Hardness	<20	mg/L	
L	W1984	96-0312	9/2	10:51	0.0-7.0	Chlorophyll a	1.9	mg/m3	
L	W1984	96-0359	9/23	13:20	0.0-7.0	Chlorophyll a	2.5	mg/m3	

Table 9. Geometric mean* of the 2009 *E. coli* results for each DWM Cape Cod Watersheds sampling station.

(S)tream or (L)ake Site	Unique ID	Number of Samples Collected	Geometric Mean (cfu)
S	W1905	6	71.3
S	W1906	6	80.2
S	W1907	6	41.7
S	W1908	6	66.0
S	W1917	6	343.9
S	W1909	6	86.0
S	W1910	6	67.9
S	W1916	6	147.8
S	W1911	6	37.7
S	W1915	6	72.7
S	W1912	6	84.9
S	W1913	6	130.7
S	W1918	6	445.9
S	W1919	6	100.5
S	W1920	6	84.8
S	W1914	6	225.8
S	W1925	6	50.0
S	W1924	6	199.7
S	W1921	6	285.5
S	W1923	6	329.8
S	W1926	6	55.5
L	W1927	6	10.0
L	W1928	6	13.5
L	W1929	6	12.0
L	W1930	6	18.2
L	W1980	6	14.7
L	W1981	6	13.5
L	W1982	6	22.4
L	W1983	6	28.3
*The detection limit was used in the geometric mean calculation if the result was below the detection limit. The second paired result from duplicate samples was removed before completing the geometric mean calculation.			

Table 10. 2009 Cape Cod Watersheds lake site Secchi disk depths.

Unique ID	Sample Date	Sample Time (24h)	Sample OWMID	Secchi Depth (m)	Max Depth (m)
W0739	7/29	11:21	96-0228	0.8	2.6
W0739	9/9	13:00	96-0347	0.4	2.6
W0739	9/30	10:28	96-0370	0.7	2.5
W0746	6/24	12:00	96-0197	1.4	2.6
W0746	9/3	11:46	96-0330	0.8	**
W0746	9/30	16:28	96-0379	0.8	2.5
W0747	6/24	13:45	96-0205	2	8
W0747	9/3	12:38	96-0333	1.9	8
W0747	9/30	15:32	96-0381	2	8.4
W0748	6/25	11:59	96-0208	2.4	3.6
W0748	9/2	15:48	96-0319	2.2	3.5
W0748	10/1	11:28	96-0389	2.3	3.5
W1214	7/29	14:50	96-0225	2.1	11
W1214	9/9	9:34	96-0339	2.4	10.2
W1214	9/30	12:00	96-0375	2	10.8
W1234	6/25	9:08	96-0215	2.8	11.3
W1234	9/3	8:42	96-0322	3.7	10.7
W1234	10/1	9:18	96-0384	3.8	11
W1237	6/25	13:55	96-0211	2.7	7.9
W1237	9/2	13:13	96-0315	2.2	7.4
W1237	10/1	13:18	96-0391	2.2	8
W1984	9/2	9:54	96-0307	7	17.3
W1984	9/23	12:20	96-0354	8	17.9

Table 11. 2009 MassDEP DWM Cape Cod Watersheds attended multiprobe data.

Unique ID/ Station ID	OWMID	Date	Time	Sample Depth (m)	Depth Qualifiers	Temperature (deg. C)	Temperature Qualifiers	pH (SU)	pH Qualifiers	Specific Conductivity (µS/cm)	Specific Conductivity Qualifiers	Total Dissolved Solids (mg/l)	Total Dissolved Solids Qualifiers	Dissolved Oxygen (mg/l)	Dissolved Oxygen Qualifiers	Dissolved Oxygen Saturation (%)	Dissolved Oxygen Saturation Qualifiers
W0739	96-0187	7/29	11:30	0.4		26.4		9.0		103		66		8.9	u, i	113	u, i
W0739	96-0187	7/29	11:36	1.4		26.3		8.5		101		64		7.9	u, i	99	u, i
W0739	96-0187	7/29	11:41	2.1		23.7		6.6	u	134		86		<0.2	u, i	<2	u, i
W0739	96-0195	9/9	12:55	0.5		21.3		9.4	c	108		70		11.0		124	
W0739	96-0195	9/9	13:04	1.0		21.2		9.3	c	108		70		10.6		119	
W0739	96-0195	9/9	13:10	1.5		21.1		9.1		107		69		9.7		109	
W0739	96-0195	9/9	13:21	2.0		20.8		7.4		106		69		##	u	##	u
W0739	96-0195	9/9	13:27	2.3		20.7		7.1		109		71		5.5	u	61	u
W0739	96-0362	9/30	10:28	0.5		18.4		8.9		110		72		10.2		109	
W0739	96-0362	9/30	10:34	1.5		18.4		8.9		109		71		10.1		107	
W0739	96-0362	9/30	10:42	2.1		18.3		8.8		109		71		9.8		104	
W0746	96-0181	6/24	11:47	0.5		17.1		6.9		84		55		10.1		105	
W0746	96-0181	6/24	11:55	1.0		16.8		6.8		84		54		9.8		101	
W0746	96-0181	6/24	12:01	1.5		16.7		6.8		83		54		9.7		100	
W0746	96-0181	6/24	12:28	1.8		16.7		6.5		82		53		9.4		96	
W0746	96-0192	9/3	11:53	0.5		21.6		8.9		88		57		10.7		121	
W0746	96-0192	9/3	12:00	1.0		21.4		8.8		88		57		10.3		116	
W0746	96-0192	9/3	12:08	2.1		21.0		8.0		86		56		9.4		105	
W0746	96-0364	9/30	16:33	0.5		18.8		9.0	u	84		55		10.8		116	
W0746	96-0364	9/30	16:40	1.0		18.8		9.1		84		55		10.8		116	
W0746	96-0364	9/30	16:47	2.0		18.3		8.1	u	84		55		8.3		89	
W0747	96-0182	6/24	13:35	0.5		18.3		6.5		81		53		9.2		98	
W0747	96-0182	6/24	13:43	2.8		17.7		6.3		81		53		8.8		93	
W0747	96-0182	6/24	13:53	5.8		17.7		6.3		81		53		8.5		90	

Unique ID/ Station ID	OWMID	Date	Time	Sample Depth (m)	Depth Qualifiers	Temperature (deg. C)	Temperature Qualifiers	pH (SU)	pH Qualifiers	Specific Conductivity (µS/cm)	Specific Conductivity Qualifiers	Total Dissolved Solids (mg/l)	Total Dissolved Solids Qualifiers	Dissolved Oxygen (mg/l)	Dissolved Oxygen Qualifiers	Dissolved Oxygen Saturation (%)	Dissolved Oxygen Saturation Qualifiers
W0747	96-0182	6/24	14:00	7.2		17.6		6.2		81		53		8.4		88	
W0747	96-0193	9/3	12:46	0.5		23.3		7.1		81		53		8.9		104	
W0747	96-0193	9/3	12:53	2.6		22.7		6.6		81		53		7.9		92	
W0747	96-0193	9/3	13:00	5.3		22.5		6.5		81		53		7.9		92	
W0747	96-0193	9/3	13:10	7.5		20.9		6.4		124		81		<0.2		<2	
W0747	96-0365	9/30	15:35	0.5		19.2		7.2		80		52		9.8		106	
W0747	96-0365	9/30	15:41	2.8		19.2		7.1		79		51		9.7		105	
W0747	96-0365	9/30	15:47	5.6		19.0		6.9		80		52		9.4		101	
W0747	96-0365	9/30	15:55	7.7		18.7		6.4		81		52		8.0		85	
W0748	96-0184	6/25	12:03	0.5		19.3		7.1		84		55		9.8		106	
W0748	96-0184	6/25	12:09	1.3		18.4	u	7.1		82		53		9.9		106	
W0748	96-0184	6/25	12:14	2.3		17.7		7.1		84		55		9.7		102	
W0748	96-0184	6/25	12:23	3.1		17.6		6.2		83		54		6.7	u	70	u
W0748	96-0190	9/2	15:37	0.5		23.5		8.5		85		55		9.9		116	
W0748	96-0190	9/2	15:44	1.5		22.5		8.6		85		55		10.1		116	
W0748	96-0190	9/2	15:50	2.5		22.1		8.4		83		54		9.8		113	
W0748	96-0190	9/2	15:57	3.0		21.9		7.9		84		55		9.3		106	
W0748	96-0367	10/1	11:27	0.5		17.8		7.1		84		54		9.4		99	
W0748	96-0367	10/1	11:32	1.1		17.8		7.0		84		54		9.4		99	
W0748	96-0367	10/1	11:38	2.1		17.8		6.9		84		54		9.4		99	
W0748	96-0367	10/1	11:44	3.0		17.6		6.8		84		54		9.4		99	
W1214	96-0186	7/29	15:14	0.4		26.0		8.7		90		58		9.6	i	120	i
W1214	96-0186	7/29	15:22	3.7		24.6		6.4	u	90		57		7.6	i	93	i
W1214	96-0186	7/29	15:29	7.4		24.3		6.2		90		57		6.9	i	83	i
W1214	96-0186	7/29	15:36	10.3		24.2		6.1		90		57		6.1	i	74	i

Unique ID/ Station ID	OWMID	Date	Time	Sample Depth (m)	Depth Qualifiers	Temperature (deg. C)	Temperature Qualifiers	pH (SU)	pH Qualifiers	Specific Conductivity (µS/cm)	Specific Conductivity Qualifiers	Total Dissolved Solids (mg/l)	Total Dissolved Solids Qualifiers	Dissolved Oxygen (mg/l)	Dissolved Oxygen Qualifiers	Dissolved Oxygen Saturation (%)	Dissolved Oxygen Saturation Qualifiers
W1214	96-0194	9/9	9:51	0.4		22.6		6.6		107		69		7.8		90	
W1214	96-0194	9/9	9:57	1.5		22.6		6.5		106		69		7.6		88	
W1214	96-0194	9/9	10:01	2.5		22.57		6.5		106		69		7.7		89	
W1214	96-0194	9/9	10:08	3.6		22.6		6.4		105		68		7.7		89	
W1214	96-0194	9/9	10:12	4.5		22.56		6.4		105		68		7.5		86	
W1214	96-0194	9/9	10:20	5.5		22.56		6.4		104		67		7.4		85	
W1214	96-0194	9/9	10:26	6.5		22.6		6.3		103		67		7.6	u	88	u
W1214	96-0194	9/9	10:32	7.5		22.5		6.2		103		67		##	u	##	u
W1214	96-0194	9/9	10:40	8.5		22.4		6.0		103		67		4.7		54	
W1214	96-0194	9/9	10:46	9.5		22.4		6.0		103		67		4.4		51	
W1214	96-0194	9/9	10:52	10.0		22.3		6.0		104		67		3.5		40	
W1214	96-0363	9/30	12:05	0.5		19.8		7.6		97		63		9.0		99	
W1214	96-0363	9/30	12:15	3.6		19.6		7.0		95		62		8.6		94	
W1214	96-0363	9/30	12:21	7.6		19.6		6.8		96		62		8.2		90	
W1214	96-0363	9/30	12:36	10.2		19.5		6.7		95		62		8.8	u	96	u
W1234	96-0183	6/25	9:03	0.5		19.0		7.3		139		91		9.3		101	
W1234	96-0183	6/25	9:23	3.0		17.7		7.0		139		90		8.3		87	
W1234	96-0183	6/25	9:34	6.0		17.5		6.8		139		91		7.4		78	
W1234	96-0183	6/25	9:53	7.2		17.1		6.6		140		91		6.1		63	
W1234	96-0183	6/25	10:03	7.9		13.7		6.5		158		103		<0.2		<2	
W1234	96-0191	9/3	8:55	0.5		22.3		7.4		142		92		8.9		102	
W1234	96-0191	9/3	9:01	1.5		22.3		7.5		142		92		8.8		102	
W1234	96-0191	9/3	9:06	2.6		22.3		7.5		142		92		8.8		101	
W1234	96-0191	9/3	9:12	3.5		22.3		7.5		142		92		8.7		101	
W1234	96-0191	9/3	9:19	4.5		22.2		7.4		142		92		8.5		97	

Unique ID/ Station ID	OWMID	Date	Time	Sample Depth (m)	Depth Qualifiers	Temperature (deg. C)	Temperature Qualifiers	pH (SU)	pH Qualifiers	Specific Conductivity (µS/cm)	Specific Conductivity Qualifiers	Total Dissolved Solids (mg/l)	Total Dissolved Solids Qualifiers	Dissolved Oxygen (mg/l)	Dissolved Oxygen Qualifiers	Dissolved Oxygen Saturation (%)	Dissolved Oxygen Saturation Qualifiers
W1234	96-0191	9/3	9:25	5.5		22.0		7.3		142		92		8.3		95	
W1234	96-0191	9/3	9:32	6.5		20.2		6.4		143		93		1.7		19	
W1234	96-0191	9/3	9:39	7.5		15.8		6.2		156		101		<0.2		<2	
W1234	96-0191	9/3	9:46	8.5		13.5		6.5		192		125		<0.2		<2	
W1234	96-0191	9/3	9:53	9.5		11.9		6.9		227		147		<0.2		<2	
W1234	96-0191	9/3	9:58	10.0		11.5		7.0		243		158		<0.2		<2	
W1234	96-0366	10/1	9:25	0.5		17.8		7.2		141		92		9.0		95	
W1234	96-0366	10/1	9:29	4.6		17.8		7.2		141		92		9.0		94	
W1234	96-0366	10/1	9:35	8.5		17.7		7.1		141		92		8.9		94	
W1234	96-0366	10/1	9:43	9.1		16.9		6.8		152		99		8.0		83	
W1234	96-0366	10/1	9:50	9.6		12.4	u	7.0		248	u	161	u	<0.2		<2	
W1234	96-0366	10/1	9:55	10.0		11.7		7.2		279		181		<0.2		<2	
W1234	96-0366	10/1	9:59	10.5		11.4		7.4		306	u	199	u	<0.2		<2	
W1237	96-0185	6/25	13:58	0.5		19.3		6.7		109		71		8.4		91	
W1237	96-0185	6/25	14:08	2.6		18.4		6.5		110		71		7.9		84	
W1237	96-0185	6/25	14:17	5.6		17.9		6.4		110		71		6.6		69	
W1237	96-0185	6/25	14:24	7.3		17.7		6.3		111		72		6.1		64	
W1237	96-0189	9/2	13:16	0.5		23.0		7.0		111		72		8.9		103	
W1237	96-0189	9/2	13:21	1.5		22.6		7.0		111		72		8.7		101	
W1237	96-0189	9/2	13:27	2.5		22.2		6.8		111		72		8.2		94	
W1237	96-0189	9/2	13:34	3.5		22.1		6.7		111		72		7.9		90	
W1237	96-0189	9/2	13:42	4.5		22.1		6.4		112		73		6.6		76	
W1237	96-0189	9/2	13:49	5.5		22.1		6.4		112		73		6.6		76	
W1237	96-0189	9/2	13:55	6.5		21.8		6.1		115		75		2.6		29	
W1237	96-0189	9/2	14:02	6.8		21.6		6.8	u	##	u	##	u	<0.2	u	<2	u

Unique ID/ Station ID	OWMID	Date	Time	Sample Depth (m)	Depth Qualifiers	Temperature (deg. C)	Temperature Qualifiers	pH (SU)	pH Qualifiers	Specific Conductivity (µS/cm)	Specific Conductivity Qualifiers	Total Dissolved Solids (mg/l)	Total Dissolved Solids Qualifiers	Dissolved Oxygen (mg/l)	Dissolved Oxygen Qualifiers	Dissolved Oxygen Saturation (%)	Dissolved Oxygen Saturation Qualifiers
W1237	96-0368	10/1	13:17	0.5		18.2		7.1		109		71		9.8		104	
W1237	96-0368	10/1	13:23	2.6		18.2		7.2		109		71		9.7		103	
W1237	96-0368	10/1	13:29	5.2		18.1		7.2		109		71		9.6		101	
W1237	96-0368	10/1	13:38	7.5		18.0		7.0		109		71		9.2		97	
W1905	96-0053	6/19	16:01	0.3		16.0		6.3		86		55		8.2		85	
W1905	96-0063	6/24	17:19	0.3		15.7		6.3		87		56		8.4		86	
W1905	96-0121	6/18	11:06	--		14.5	s	--		--		--		--		--	
W1905	96-0142	10/5	9:43	--		14.4	s	--		--		--		--		--	
W1905	96-0260	7/24	16:42	0.3		18.7		6.2		81		52		7.6		83	
W1905	96-0270	7/29	17:02	0.3		19.9		6.2		88		56		6.9		77	
W1905	96-0463	8/28	16:55	0.4		17.3		6.1		89		57		7.6		80	
W1905	96-0473	9/2	16:23	0.4		18.0		6.2		87		56		8.1		86	
W1906	96-0052	6/19	15:38	0.4		17.9		6.5		95		61		9.3		100	
W1906	96-0062	6/24	16:57	0.4		17.1		6.6		94		60		9.3		99	
W1906	96-0259	7/24	16:16	0.3		20.1		6.4		89		57		8.7		98	
W1906	96-0269	7/29	16:38	0.5		22.0		6.6		95		61		8.8		103	
W1906	96-0462	8/28	16:29	0.5		19.7		6.4		98		63		8.5		94	
W1906	96-0472	9/2	16:03	0.3		20.1		6.5		93		60		9.3		103	
W1909	96-0124	6/18	12:30	--		13.7	s	--		--		--		--		--	
W1909	96-0145	10/6	10:51	--		13.2	s	--		--		--		--		--	
W1910	96-0051	6/19	15:10	0.4		16.7		6.4		85		55		8.4		88	
W1910	96-0061	6/24	16:19	0.4		16.8		6.4		85		54		8.6		91	
W1910	96-0258	7/24	15:21	0.5		19.4		6.0		75		48		6.7		74	
W1910	96-0268	7/29	15:46	0.6		21.1		6.3		89		57		7.8		89	
W1910	96-0461	8/28	15:49	0.5		17.5		6.3		87		56		9.5		100	

Unique ID/ Station ID	OWMID	Date	Time	Sample Depth (m)	Depth Qualifiers	Temperature (deg. C)	Temperature Qualifiers	pH (SU)	pH Qualifiers	Specific Conductivity (µS/cm)	Specific Conductivity Qualifiers	Total Dissolved Solids (mg/l)	Total Dissolved Solids Qualifiers	Dissolved Oxygen (mg/l)	Dissolved Oxygen Qualifiers	Dissolved Oxygen Saturation (%)	Dissolved Oxygen Saturation Qualifiers
W1910	96-0471	9/2	15:28	0.5		18.7		6.2		86		55		8.4		90	
W1911	96-0050	6/19	14:37	0.3		15.2		6.5		103		66		8.6		87	
W1911	96-0060	6/24	15:50	0.3		15.0		6.5		101		65		8.7		88	
W1911	96-0126	6/18	13:18	--		14.7	s	--		--		--		--		--	
W1911	96-0147	10/6	11:28	--		14.1	s	--		--		--		--		--	
W1911	96-0257	7/24	14:41	0.3		17.9		6.5		98		63		8.1		87	
W1911	96-0267	7/29	15:12	0.3		19.1		6.5		102		66		7.9		87	
W1911	96-0460	8/28	15:12	0.5		16.5		6.2		106		68		8.4		87	
W1911	96-0470	9/2	15:02	0.4		17.6		6.4		101		65		8.3		87	
W1912	96-0049	6/19	14:16	0.3		16.5		6.2		123		79		7.6		80	
W1912	96-0059	6/24	15:19	0.2		15.9		6.24		119		76		8.2		85	
W1912	96-0128	6/18	14:15	--		16.4	s	--		--		--		--		--	
W1912	96-0149	10/6	11:49	--		15.5	s	--		--		--		--		--	
W1912	96-0256	7/24	14:14	0.3		19.1		6.2		116		74		7.4		82	
W1912	96-0266	7/29	14:47	0.2		20.3		6.2		124		79		7.2		81	
W1912	96-0459	8/28	14:44	0.2		18.0		6.0		129		83		7.4		79	
W1912	96-0469	9/2	14:43	0.2		18.7		6.3		119		76		7.8		83	
W1915	96-0044	6/19	11:26	0.1		17.0		6.3		162		104		8.4		89	
W1915	96-0054	6/24	11:04	0.3		16.0		6.2		168		107		8.6		89	
W1915	96-0251	7/24	10:23	0.3		18.6		5.6		129		83		4.7		51	
W1915	96-0261	7/29	10:57	0.2		22.4		6.1		161		103		6.5		76	
W1915	96-0454	8/28	11:02	0.2		17.3		6.0		169		108		8.1		86	
W1915	96-0464	9/2	11:03	0.2		16.5		6.0		162		103		6.3		65	
W1915	96-0509	9/10	10:35	0.3		15.1		6.3		168		107		6.8		68	
W1915	96-0511	9/14	11:31	--		16.6		--		--		--		5.7		59	

Unique ID/ Station ID	OWMID	Date	Time	Sample Depth (m)	Depth Qualifiers	Temperature (deg. C)	Temperature Qualifiers	pH (SU)	pH Qualifiers	Specific Conductivity (µS/cm)	Specific Conductivity Qualifiers	Total Dissolved Solids (mg/l)	Total Dissolved Solids Qualifiers	Dissolved Oxygen (mg/l)	Dissolved Oxygen Qualifiers	Dissolved Oxygen Saturation (%)	Dissolved Oxygen Saturation Qualifiers
W1916	96-0045	6/19	11:43	0.6		15.3		6.2		225	u	144	u	7.1		73	
W1916	96-0055	6/24	11:28	0.6		14.1		5.8		199		127		5.5		55	
W1916	96-0252	7/24	10:45	0.7		17.2		5.4		146		93		4.3		46	
W1916	96-0262	7/29	11:26	0.1		20.0		5.9		206		132		4.5		50	
W1916	96-0455	8/28	11:24	0.7		15.2		6.1		236		151		6.8		69	
W1916	96-0465	9/2	11:26	0.3		14.1		5.3		205		131		4.4		43	
W1916	96-0510	9/10	11:20	0.6		13.7		6.3		217	u	139	u	6.4		62	
W1916	96-0512	9/14	12:02	--		15.4		--		--		--		4.4		45	
W1920	96-0046	6/19	12:35	0.5		18.5		6.4		105	u	67	u	8.6		94	
W1920	96-0056	6/24	13:21	0.5		17.5		6.4		113		72		8.7		93	
W1920	96-0253	7/24	11:57	0.3		20.8		6.2		110		70		7.8		89	
W1920	96-0263	7/29	12:32	0.3		23.3		6.4		117		75		7.6		91	
W1920	96-0456	8/28	12:43	0.4		21.0		6.3		128		82		8.2		93	
W1920	96-0466	9/2	12:56	0.3		20.1		6.4		120		77		8.2		91	
W1922	96-0047	6/19	13:00	0.1		19.5		6.7		1137	c	727	c	7.4		82	
W1922	96-0057	6/24	13:58	0.9	t	16.7	t	6.8	t	##	u, c, t	##	u, c, t	5.3	t	64	t
W1922	96-0254	7/24	12:31	0.4	t	20.6	t	6.5	t	##	u, c, t	##	u, c, t	5.0	u, t	59	u, t
W1922	96-0264	7/29	13:06	0.1	t	26.3	t	6.7	t	##	c, t	##	c, t	7.5	t	95	t
W1922	96-0457	8/28	13:18	0.2	t	22.9	t	6.8	t	1793	c, t	1148	c, t	8.9	t	105	t
W1922	96-0467	9/2	13:32	0.3	t	21.2	t	6.6	t	2021	u, c, t	1293	u, c, t	6.5	u, t	74	u, t
W1924	96-0048	6/19	13:27	0.0	i	15.4		5.7		128		82		6.8		69	
W1924	96-0058	6/24	14:30	0.1		14.3		5.8		127		81		6.3		63	
W1924	96-0255	7/24	13:09	0.1		16.8		5.6		114	u	73	u	5.3		56	
W1924	96-0265	7/29	13:59	0.1		19.4		5.9		155		100		6.6		73	

Unique ID/ Station ID	OWMID	Date	Time	Sample Depth (m)	Depth Qualifiers	Temperature (deg. C)	Temperature Qualifiers	pH (SU)	pH Qualifiers	Specific Conductivity (µS/cm)	Specific Conductivity Qualifiers	Total Dissolved Solids (mg/l)	Total Dissolved Solids Qualifiers	Dissolved Oxygen (mg/l)	Dissolved Oxygen Qualifiers	Dissolved Oxygen Saturation (%)	Dissolved Oxygen Saturation Qualifiers
W1924	96-0458	8/28	**	**		**		**		**		**		**		**	
W1924	96-0468	9/2	14:01	0.1		18.0		5.8		143		92		7.0		74	
W1981	96-0572	10/7	13:25	0.2		19.4		6.8		76		49		9.2		102	
W1982	96-0574	7/29	**	**		**		**		**		**		**		**	
W1983	96-0573	7/29	**	**		**		**		**		**		**		**	
W1984	96-0188	9/2	10:15	0.5		23.6		7.2		79		51		8.6		102	
W1984	96-0188	9/2	10:20	3.5		23.5		7.2		79		51		8.6		101	
W1984	96-0188	9/2	10:26	7.0		23.4		7.2		79		51		8.5		100	
W1984	96-0188	9/2	10:31	8.0		20.6	u	6.8		80		52		8.6		95	
W1984	96-0188	9/2	10:38	10.0		15.2		6.3		82		53		7.9		78	
W1984	96-0188	9/2	10:49	12.0		11.7		5.7		83		54		<0.2		<2	
W1984	96-0188	9/2	10:54	14.0		9.8		5.8		89		58		<0.2		<2	
W1984	96-0188	9/2	10:58	15.0		9.3		6.1		103		67		<0.2		<2	
W1984	96-0188	9/2	11:03	16.0		8.8		6.3		130		84		<0.2		<2	
W1984	96-0188	9/2	11:07	16.5		8.7		6.4		137		89		<0.2		<2	
W1984	96-0196	9/23	13:00	0.5		20.6		6.9		78		51		9.8		109	
W1984	96-0196	9/23	13:05	4.5		20.5		7.0		78		51		9.7		108	
W1984	96-0196	9/23	13:11	10.0		18.3	u	6.8		79		51		9.7		103	
W1984	96-0196	9/23	13:18	10.5		14.8		5.9		79		52		5.9		58	
W1984	96-0196	9/23	13:23	11.1		13.7		5.8		81		52		3.7		36	
W1984	96-0196	9/23	13:34	11.5		13.1		5.81		81		53		2.0		19	
W1984	96-0196	9/23	13:38	12.0		12.6		5.8		81		53		0.9		8	
W1984	96-0196	9/23	13:48	13.0		11.0		5.7		84		55		<0.2		<2	
W1984	96-0196	9/23	13:53	15.0		9.2		6.3		116		75		<0.2		<2	
W1984	96-0196	9/23	14:00	17.0		8.8		6.5		145		94		<0.2		<2	

Unique ID/ Station ID	OWMID	Date	Time	Sample Depth (m)	Depth Qualifiers	Temperature (deg. C)	Temperature Qualifiers	pH (SU)	pH Qualifiers	Specific Conductivity (µS/cm)	Specific Conductivity Qualifiers	Total Dissolved Solids (mg/l)	Total Dissolved Solids Qualifiers	Dissolved Oxygen (mg/l)	Dissolved Oxygen Qualifiers	Dissolved Oxygen Saturation (%)	Dissolved Oxygen Saturation Qualifiers
W2071	96-0123	6/18	12:02	--		13.4	s	--		--		--		--		--	
W2071	96-0144	10/7	15:12	--		15.8	s	--		--		--		--		--	
W2072	96-0118	6/18	9:31	--		10.7	s	--		--		--		--		--	
W2072	96-0139	9/23	16:25	--		12.2	s	--		--		--		--		--	
W2073	96-0130	6/18	15:12	--		18.1	s	--		--		--		--		--	
W2073	96-0151	10/7	12:37	--		15.6	s	--		--		--		--		--	
W2074	96-0129	6/18	14:42	--		17.1	s	--		--		--		--		--	
W2074	96-0150	10/7	12:56	--		15.0	s	--		--		--		--		--	
W2075	96-0125	6/18	12:52	--		19.7	s	--		--		--		--		--	
W2075	96-0146	10/7	14:46	--		16.5	s	--		--		--		--		--	
W2076	96-0137	6/19	10:53	--		17.1	s	--		--		--		--		--	
W2076	96-0158	10/1	8:26	--		11.6	s	--		--		--		--		--	
W2077	96-0127	6/18	13:52	--		19.1	s	--		--		--		--		--	
W2077	96-0148	10/7	14:18	--		16.6	s	--		--		--		--		--	
W2078	96-0119	6/18	10:28	--		11.0	s	--		--		--		--		--	
W2078	96-0140	10/7	16:09	--		12.2	s	--		--		--		--		--	
W2079	96-0122	6/18	11:30	--		14.6	s	--		--		--		--		--	
W2079	96-0143	10/7	15:38	--		15.6	s	--		--		--		--		--	
W2080	96-0138	6/19	10:10	--		18.3	s	--		--		--		--		--	
W2080	96-0159	10/1	12:31	--		14.7	s	--		--		--		--		--	
W2082	96-0135	6/18	17:03	--		17.7	s	--		--		--		--		--	
W2082	96-0156	10/7	11:16	--		14.9	s	--		--		--		--		--	
W2084	96-0131	6/18	15:42	--		14.6	s	--		--		--		--		--	
W2084	96-0152	10/7	12:17	--		13.8	s	--		--		--		--		--	
W2085	96-0132	6/18	16:13	--		13.3	s	--		--		--		--		--	

Unique ID/ Station ID	OWMID	Date	Time	Sample Depth (m)	Depth Qualifiers	Temperature (deg. C)	Temperature Qualifiers	pH (SU)	pH Qualifiers	Specific Conductivity (µS/cm)	Specific Conductivity Qualifiers	Total Dissolved Solids (mg/l)	Total Dissolved Solids Qualifiers	Dissolved Oxygen (mg/l)	Dissolved Oxygen Qualifiers	Dissolved Oxygen Saturation (%)	Dissolved Oxygen Saturation Qualifiers
W2085	96-0153	10/7	11:54	--		13.4	s	--		--		--		--		--	
W2086	96-0136	6/18	17:22	--		12.7	s	--		--		--		--		--	
W2086	96-0157	10/7	11:03	--		12.0	s	--		--		--		--		--	
W2087	96-0133	6/18	16:39	--		17.4	s	--		--		--		--		--	
W2087	96-0154	10/7	11:33	--		14.3	s	--		--		--		--		--	

Table 12. 2009 MassDEP DWM Cape Cod Watersheds unattended probes dissolved oxygen data.

Unique ID	OWMID	Start Date	Hours Monitored	Avg (mg/L)	Min (mg/L)	Hours < 3.0 mg/L	Hours < 4.0 mg/L	Hours < 5.0 mg/L	Hours < 6.0 mg/L	Saturation: Avg (%)	Saturation: Min (%)	Saturation: Max (%)
W1905	96-0043	6/19	120.5	7.3	6.3	-	-	-	-	74.4	63.4	96.8
W1905	96-0250	7/24	120	6.4	5.3	-	-	-	55.2	70.9	57.7	93.5
W1905	96-0453	8/28	119	6.6	5.4	-	-	-	26.6	68.4	57.2	89.1
W1906	96-0042	6/19	120.5	8.2	5.7	-	-	-	2.7	87.5	67.9	125.6
W1906	96-0249	7/24	118.5	7.8	6.3	-	-	-	-	89.6	70.5	115.0
W1906	96-0452	8/28	115.5	7.6	6.4	-	-	-	-	81.1	69.3	104.8
W1910	96-0041	6/19	120.5	7.8	6.8	-	-	-	-	80.3	68.0	103.9
W1910	96-0248	7/24	120	6.7	5.7	-	-	-	28.9	76.4	60.8	100.9
W1910	96-0451	8/28	119	6.4	4.1	-	-	24.5	46.7	67.2	43.6	101.3
W1911	96-0040	6/19	120.5	8.5	7.9	-	-	-	-	85.2	81.3	89.1
W1911	96-0247	7/24	120	7.9	7.6	-	-	-	-	85.6	83.2	89.4
W1911	96-0450	8/28	119.5	8.2	7.3	-	-	-	-	85.1	77.2	88.8
W1912	96-0039	6/19	120.5	7.6	6.8	-	-	-	-	78.4	69.5	86.1
W1912	96-0246	7/24	120	7.1	6.7	-	-	-	-	78.5	74.7	87.3
W1912	96-0449	8/28	119.5	7.4	6.7	-	-	-	-	78.4	73.5	87.4
W1915	96-0034	6/19	119.5	6.3	4.7	-	-	30.2	63.9	64.2	45.9	109.6
W1915	96-0241	7/24	120	5.0	3.2	-	45.2	70.4	88.1	57.0	35.4	95.4
W1915	96-0444	8/28	119.5	5.1	3.4	-	26.8	69.0	97.1	53.2	35.6	105.1
W1915	96-0507	9/10	96.5	5.7	4.2	-	-	29.2	65.5	57.6	42.7	86.0
W1916	96-0035	6/19	119	6.1	4.4	-	-	26.7	65.5	62.3	42.6	108.0
W1916	96-0242	7/24	120	3.6	3.0	2.4	100.8	120.0	120.0	40.3	32.8	53.6
W1916	96-0445	8/28	119.5	4.1	2.6	33.1	72.7	86.0	98.9	42.7	27.4	74.3
W1916	96-0508	9/10	96.5	5.5	3.9	-	5.8	35.5	57.1	55.2	39.4	73.5
W1920	96-0036	6/19	74	7.9	7.2	-	-	-	-	85.0	77.3	92.2
W1920	96-0243	7/24	97.5	6.5	5.0	-	-	0.1	12.6	76.2	60.1	87.9
W1920	96-0446	8/28	46	7.5	7.2	-	-	-	-	82.9	78.8	91.9
W1922	96-0037	6/19	120	5.2	2.5	3.5	21.9	50.3	84.4	59.2	27.9	94.5
W1922	96-0244	7/24	120	4.8	0.8	19.0	54.3	66.6	79.2	59.3	9.3	115.4
W1922	96-0447	8/28	120	5.1	0.8	6.8	18.4	57.9	95.3	56.2	8.2	106.9
W1924	96-0038	6/19	58	6.4	5.4	-	-	-	8.8	63.2	55.1	72.6
W1924	96-0245	7/24	120	6.2	5.4	-	-	-	12.4	66.5	56.7	74.4
W1924	96-0448	--	--	--	--	--	--	--	--	--	--	--

Table 13. 2009 MassDEP DWM Cape Cod Watersheds summary of unattended water temperature data (multiprobe and thermistor).

Unique ID/ Station ID	Gear Type	OWMID	Start Date	Hours Monitored	Avg (deg. C)	Max (deg. C)	Mean of the Daily Max (deg. C)	Hours > 20 deg. C	Hours > 28.3 deg. C	Percent of Time >20 deg C	Percent of Time >28.3 deg C
W1905	Multiprobe	96-0043	6/19	120.5	15.0	18.2	16.2	-	-	0%	0%
W1905	Multiprobe	96-0250	7/24	120.0	19.0	21.8	21.1	27.1	-	23%	0%
W1905	Multiprobe	96-0453	8/28	119.0	16.6	18.9	18.1	-	-	0%	0%
W1905	Thermistor	96-0100	6/18	2,614.0	16.8	21.7	18.4	194.3	-	7%	0%
W1906	Multiprobe	96-0042	6/19	120.5	16.7	22.0	19.2	3.2	-	3%	0%
W1906	Multiprobe	96-0249	7/24	118.5	20.7	23.9	23.2	78.0	-	66%	0%
W1906	Multiprobe	96-0452	8/28	115.5	18.1	20.0	19.4	-	-	0%	0%
W1909	Thermistor	96-0103	6/18	2,637.5	16.3	20.1	17.4	2.3	-	0%	0%
W1910	Multiprobe	96-0041	6/19	120.5	15.6	20.3	17.2	2.9	-	2%	0%
W1910	Multiprobe	96-0248	7/24	120.0	20.2	23.8	23.0	56.6	-	47%	0%
W1910	Multiprobe	96-0451	8/28	119.0	17.5	19.6	19.1	-	-	0%	0%
W1911	Multiprobe	96-0040	6/19	120.5	14.5	16.4	15.2	0	-	0%	0%
W1911	Multiprobe	96-0247	7/24	120.0	18.2	19.7	19.3	0	-	0%	0%
W1911	Multiprobe	96-0450	8/28	119.5	16.7	18.7	17.9	0	-	0%	0%
W1911	Thermistor	96-0105	6/18	2,637.5	16.6	20.0	17.6	0	-	0%	0%
W1912	Multiprobe	96-0039	6/19	120.5	15.7	18.0	16.4	0	-	0%	0%
W1912	Multiprobe	96-0246	7/24	120.0	19.3	21.4	20.5	20.7	-	17%	0%
W1912	Multiprobe	96-0449	8/28	119.5	18.0	19.8	19.0	-	-	0%	0%
W1912	Thermistor	96-0107	6/18	2,637.0	17.8	21.9	18.7	215.1	-	8%	0%
W1915	Multiprobe	96-0034	6/19	119.5	15.3	21.8	17.0	3.6	-	3%	0%
W1915	Multiprobe	96-0241	7/24	120.0	20.5	25.8	24.6	55.4	-	46%	0%
W1915	Multiprobe	96-0444	8/28	119.5	17.2	21.1	19.3	4.4	-	4%	0%
W1915	Multiprobe	96-0507	9/10	96.5	16.0	19.9	18.5	-	-	0%	0%
W1916	Multiprobe	96-0035	6/19	119.0	14.9	19.7	16.5	0	-	0%	0%
W1916	Multiprobe	96-0242	7/24	120.0	19.6	23.2	21.9	49.2	-	41%	0%
W1916	Multiprobe	96-0445	8/28	119.5	16.4	17.8	17.5	-	-	0%	0%
W1916	Multiprobe	96-0508	9/10	96.5	15.8	17.5	16.7	0	-	0%	0%
W1920	Multiprobe	96-0036	6/19	120.0	17.3	20.2	18.0	3.9	-	3%	0%
W1920	Multiprobe	96-0243	7/24	120.5	22.1	24.2	23.6	115.7	-	96%	0%
W1920	Multiprobe	96-0446	8/28	117.0	19.7	21.1	20.5	47.7	-	41%	0%
W1922	Multiprobe	96-0037	6/19	120.0	16.9	22.8	18.4	9.7	-	8%	0%

Unique ID/ Station ID	Gear Type	OWMID	Start Date	Hours Monitored	Avg (deg. C)	Max (deg. C)	Mean of the Daily Max (deg. C)	Hours > 20 deg. C	Hours > 28.3 deg. C	Percent of Time >20 deg C	Percent of Time >28.3 deg C
W1922	Multiprobe	96-0244	7/24	120	22.5	28.3	26.2	100.2	-	84%	0%
W1922	Multiprobe	96-0447	8/28	120	18.8	22.6	20.3	21.2	-	18%	0%
W1924	Multiprobe	96-0038	6/19	121.0	13.6	16.9	14.5	-	-	0%	0%
W1924	Multiprobe	96-0245	7/24	120.0	17.4	21.1	20.3	7.3	-	6%	0%
W1924	Multiprobe	96-0448	--	--	--	--	--	--	--		
W2071	Thermistor	96-0102	6/18	863.5	14.1	17.1	15.2	-	-	0%	0%
W2072	Thermistor	96-0097	6/18	2,334.0	11.7	16.0	12.5	0	-	0%	0%
W2073	Thermistor	96-0109	6/18	2,661.0	18.8	24.6	20.3	958.1	-	36%	0%
W2074	Thermistor	96-0108	6/18	2,661.5	18.1	25.4	20.6	669.2	-	25%	0%
W2075	Thermistor	96-0104	6/18	2,665.5	21.3	28.2	23.2	1,732.0	-	65%	0%
W2076	Thermistor	96-0116	6/19	2,493.0	18.9	28.1	22.0	862.0	-	35%	0%
W2077	Thermistor	96-0106	6/18	2,664.0	21.0	27.9	22.3	1,578.1	-	59%	0%
W2078	Thermistor	96-0098	6/18	1,285.0	12.2	15.9	14.4	-	-	0%	0%
W2079	Thermistor	96-0101	6/18	2,667.5	17.5	24.8	20.0	445.3	-	17%	0%
W2080	Thermistor	96-0117	6/19	2,498.0	20.7	25.8	21.9	1,607.9	-	64%	0%
W2082	Thermistor	96-0114	6/18	2,657.5	18.8	25.5	20.3	900.9	-	34%	0%
W2084	Thermistor	96-0110	6/18	2,660.0	16.0	21.0	17.1	13.6	-	1%	0%
W2085	Thermistor	96-0111	6/18	2,659.0	14.0	19.0	15.8	-	-	0%	0%
W2086	Thermistor	96-0115	6/18	2,657.5	12.9	16.9	14.4	0	-	0%	0%
W2087	Thermistor	96-0112	6/18	2,658.5	18.7	25.2	19.7	901.6	-	34%	0%

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APPENDIX 1: 2009 DATA SYMBOLS AND QUALIFIERS

Excerpted from: Water Quality Data Validation Report for Year 2009 Project Data (CN 362.0)

The following data qualifiers or symbols are used in the MADEP/DWM WQD database for qualified and censored water quality and multi-probe data. Decisions regarding censoring vs. qualification for specific, problematic data are made based on a thorough review of all pertinent information related to the data. Data qualifiers reported by laboratories are typically either directly-transferable to DWM data (e.g., "H" for holding time violation) or indirectly-transferable, where the qualifier symbol is transformed to conform to DWM's qualifier list (e.g., "R" qualifier used by a lab to reject data due to poor QC results is transformed to "a").

General Symbols (applicable to all types):

"##" = Censored data (i.e., data that has been discarded for some reason).

"**" = Missing data (i.e., data that should have been reported).

"--" = No data (i.e., data not taken/not required)

"^^" = No data due to no water

Multi-probe-specific Qualifiers:

"i" = inaccurate readings from Multi-probe likely; may be due to significant pre-survey calibration problems, post-survey checks outside typical acceptance ranges for the low ionic and deionized water checks, lack of calibration of the depth sensor prior to use, or to checks against laboratory analyses. Where documentation on unit pre-calibration is lacking, but SOPs at the time of sampling dictated pre-calibration prior to use, then data are considered potentially inaccurate.

"m" = method not followed; one or more protocols contained in the DWM Multi-probe SOP not followed, i.e., operator error (e.g., less than 3 readings per station (rivers) or per depth (lakes), or instrument failure not allowing method to be implemented.

"s" = field sheet recorded data were used to accept data, not data electronically recorded in the Multi-probe surveyor unit, due to operator error or equipment failure.

"u" = unstable readings, due to lack of sufficient equilibration time prior to final readings, non-representative location, highly-variable water quality conditions, etc. See Section 4.1 for acceptance criteria.

"c" = greater than calibration standard used for pre-calibration, or outside the acceptable range about the calibration standard. Typically used for conductivity (>718, 1,413, 2,760, 6,668 or 12,900 uS/cm) or turbidity (>10, 20 or 40 NTU). It can also be used for TDS and Salinity calculations based on qualified ("c") conductivity data, or that the calculation was not possible due to censored conductivity data (TDS and Salinity are calculated values and entirely based on conductivity reading). See Section 4.1 for acceptance criteria.

“r**”** = data not representative of actual field conditions.

“t” = tidal conditions

<u>Sample-Specific Qualifiers</u>:

“a” = accuracy as estimated at WES Lab via matrix spikes, PT sample recoveries, internal check standards and lab-fortified blanks did not meet project data quality objectives identified for program or in QAPP.

“b” = blank Contamination in lab reagent blanks and/or field blank samples (indicating possible bias high and false positives).

“d” = precision of field duplicates (as RPD) did not meet project data quality objectives identified for program or in QAPP. Batched samples may also be affected.

“e” = not theoretically possible. Specifically, used for bacteria data where colonies per unit volume for e-coli bacteria > fecal coliform bacteria, for lake Secchi and station depth data where a specific Secchi depth is greater than the reported station depth, and for other incongruous or conflicting results.

“f” = frequency of quality control duplicates did not meet data quality objectives identified for program or in QAPP.

“h” = holding time violation (usually indicating possible bias low)

“j” = ‘estimated’ value; used for lab-related issues where certain lab QC criteria are not met and re-testing is not possible (as identified by the WES lab only). Also used to report sample data where the sample concentration is less than the ‘reporting’ limit or RDL and greater than the method detection limit or MDL (mdl< x <rdl). Also used to note where values have been reported at levels less than the mdl.

“m” = method SOP not followed, only partially implemented or not implemented at all, due to complications with sample matrix (e.g., sediment in sample, floc formation), lab error (e.g., cross-contamination between samples), additional steps taken by the lab to deal with matrix complications, lost/unanalyzed samples, and missing data.

“p” = samples not preserved per SOP or analytical method requirements.

“r” = samples collected may not be representative of actual field conditions, including the possibility of “outlier” data.

“t” = tidal conditions