



# North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850  
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December 3, 2012

North Dakota Department of Health  
Division of Water Quality  
918 East Divide Avenue  
Bismarck, ND 58501-1947

RE: October 2012 Devils Lake Outlets Monthly Discharge and Water Quality Report

Enclosed are the monthly discharge reports for the Devils Lake Outlets for the month of October 2012 and summaries of water quality sample results and flow data. The West End Outlet operated continuously throughout the reported period; however, discharges from the East End Outlet were limited to allow repairs.

Executive Order 2012-07 suspends water quality standards that may restrict the operation of the outlets. Some samples contained sulfates above 750 milligrams per liter (mg/L) which is used as a metric for some standards. Sulfates were detected above 750 mg/L in samples collected from the following sites below the confluence of Tolna Coulee with the Sheyenne River during the reported period: below Pekin (Highway 1), near Cooperstown, and the downstream Lake Ashtabula crossing, below Baldhill Dam, and at Lisbon.

The attached tables contain average daily outlet discharges and water quality results from samples collected from the outlets and the corresponding upstream and downstream locations. Also included are average daily stream flow data and conductivity data obtained from the USGS gaging stations located upstream and downstream of the outlets.

If you have any questions, please contact me at 701-328-4948.

Sincerely,

Jonathan Kelsch P.E.  
Head, Construction Section  
JK:MSW:416-10

OUTLET OPERATOR NAME/ADDRESS

NAME: ND State Water Commission  
 ADDRESS: 900 E Boulevard Avenue,  
 Bismarck ND 58505

MONTHLY DISCHARGE REPORT


LOCATION: WEST END OUTLET

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
10/1/12	10/31/12

LOCATION: Benson Co, ND

Devils Lake West Outlet discharged 12,277 ac-ft over 31 Days

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.52	8.63	8.56	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	NA	NA	NA	µS/cm	Continuous	Recorder
SULFATE	581	602	592	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	586	598	591	mg/L	2 x Week	GRAB
OUTLET DISCHARGE	119	230	200	cfs	Continuous	Recorder
SIGNATURE				12/3/12	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, HEAD, CONSTRUCTION SECTION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

Summary of individual sample results and flow data for outlet, upstream & downstream monitoring locations attached.

Notes:

- ac-ft - Acre feet
- SU - Standard Units
- µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
- mg/L - Milligrams per liter or parts per million
- cfs - Cubic feet per second
- NA - Not available

OUTLET OPERATOR NAME/ADDRESS

NAME: ND State Water Commission  
 ADDRESS: 900 E Boulevard Avenue,  
 Bismarck ND 58505

MONTHLY DISCHARGE REPORT


LOCATION: EAST END OUTLET

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
10/1/12	10/31/12

LOCATION: Ramsey, Benson, Nelson, ND

Devils Lake East Outlet discharged 6,659 ac-ft over 16 Days

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.35	8.67	8.57	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	NA	NA	NA	µS/cm	Continuous	Recorder
SULFATE	1030	1050	1040	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	1030	1045	1040	mg/L	2 x Week	GRAB
OUTLET DISCHARGE	0	369	248	cfs	Continuous	Recorder
SIGNATURE				12/3/12	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, HEAD, CONSTRUCTION SECTION			DATE	TELEPHONE NUMBER	
COMMENT AND EXPLANATION OF ANY VIOLATIONS						
Summary of individual sample results and flow data for outlet, upstream & downstream monitoring locations attached.						

Notes:

- ac-ft - Acre feet
- SU - Standard Units
- µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
- mg/L - Milligrams per liter or parts per million
- cfs - Cubic feet per second
- NA - Not available

OUTLET OPERATOR NAME/ADDRESS

NAME: ND State Water Commission  
 ADDRESS: 900 E Boulevard Avenue,  
 Bismarck ND 58505

MONTHLY DISCHARGE REPORT

LOCATION: UPSTREAM OF THE WEST END OUTLET (FLORA)

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
10/1/12	10/31/12

LOCATION: Benson Co, ND

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.36	8.49	8.44	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	1,600	2,060	1,767	µS/cm	Continuous	Recorder
SULFATE	462	652	535	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	471	653	534	mg/L	2 x Week	GRAB
FLOW, INSTREAM	0	12	5	cfs	Continuous	Recorder
SIGNATURE	<i>Jon Kelsch</i>			12/3/12	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, HEAD, CONSTRUCTION SECTION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

Summary of individual sample results and flow data for outlet, upstream & downstream monitoring locations attached.

Notes:

- SU - Standard Units
- µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
- mg/L - Milligrams per liter or parts per million
- cfs - Cubic feet per second
- USGS streamflow and specific conductance data courtesy of the USGS
- USGS data are provisional and subject to revision

OUTLET OPERATOR NAME/ADDRESS

NAME: ND State Water Commission  
 ADDRESS: 900 E Boulevard Avenue,  
 Bismarck ND 58505


MONTHLY DISCHARGE REPORT

LOCATION: DOWNSTREAM OF THE WEST END OUTLET (BREMEN)  
 UPSTREAM OF THE EAST END OUTLET

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
10/1/12	10/31/12

LOCATION: Eddy Co, ND

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.51	8.56	8.53	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	1,870	1,920	1,897	µS/cm	Continuous	Recorder
SULFATE	591	598	594	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	591	596	594	mg/L	2 x Week	GRAB
FLOW, INSTREAM	128	255	209	cfs	Continuous	Recorder
SIGNATURE				12/3/12	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, HEAD, CONSTRUCTION SECTION			DATE	TELEPHONE NUMBER	
COMMENT AND EXPLANATION OF ANY VIOLATIONS						
Summary of individual sample results and flow data for outlet, upstream & downstream monitoring locations attached.						

Notes:

- SU - Standard Units
- µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
- mg/L - Milligrams per liter or parts per million
- cfs - Cubic feet per second
- USGS streamflow and specific conductance data courtesy of the USGS
- USGS data are provisional and subject to revision

OUTLET OPERATOR NAME/ADDRESS

NAME: ND State Water Commission  
 ADDRESS: 900 E Boulevard Avenue,  
 Bismarck ND 58505


MONTHLY DISCHARGE REPORT

LOCATION: DOWNSTREAM OF THE EAST END OUTLET (PEKIN)

FACILITY: Devils Lake Outlet Project

MONITORING PERIOD	
START DATE	END DATE
10/1/12	10/31/12

LOCATION: Nelson Co, ND

PARAMETER	MINIMUM	MAXIMUM	AVERAGE	UNITS	SAMPLING FREQUENCY	TYPE
pH	8.42	8.52	8.47	SU	2 x Week	GRAB
SPECIFIC CONDUCTANCE	NA	NA	NA	µS/cm	Continuous	Recorder
SULFATE	535	808	662	mg/L	2 x Week	GRAB
7 DAY AVERAGE OF SULFATE	539	793	648	mg/L	2 x Week	GRAB
FLOW, INSTREAM	NA	NA	NA	cfs	Continuous	Recorder
SIGNATURE				12/3/12	701-328-4948	
NAME AND TITLE	JONATHAN KELSCH, HEAD, CONSTRUCTION SECTION			DATE	TELEPHONE NUMBER	

COMMENT AND EXPLANATION OF ANY VIOLATIONS

Summary of individual sample results and flow data for outlet, upstream & downstream monitoring locations attached.

Notes:

- SU - Standard Units
- µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
- mg/L - Milligrams per liter or parts per million
- cfs - Cubic feet per second
- NA - Not available

**Daily Outlet Discharge and Upstream and Downstream Flows  
Devils Lake Outlets**

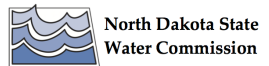
Date	Above West End Outlet - Sheyenne River near Flora		West End Outlet		Below West End Outlet/Above East End Outlet -Sheyenne River near Bremen		East End Outlet		Below East End Outlet - Tolna Coulee near Tolna		Below East End Outlet - Sheyenne River near Cooperstown	
	Average Streamflow USGS Gage (cfs)	Average Specific Conductance USGS Gage (µS/cm)	Average Daily Outlet Discharge (cfs)	Total Daily Volume (ft³)	Average Streamflow USGS Gage (cfs)	Average Specific Conductance USGS Gage (µS/cm)	Average Daily Outlet Discharge (cfs)	Total Daily Volume (ft³)	Average Streamflow USGS Gage (cfs)	Average Specific Conductance USGS Gage (µS/cm)	Average Streamflow USGS Gage (cfs)	Average Specific Conductance USGS Gage (µS/cm)
10/1/12	1	1,960	223	19,239,442	223	1,900	170	6,454,000	112	3,000	581	2,540
10/2/12	1	1,950	220	19,016,330	208	1,900	210	6,583,000	59	3,010	585	2,540
10/3/12	0	1,940	191	16,467,049	197	1,900	124	5,264,000	81	2,980	592	2,540
10/4/12	1	2,060	214	18,431,194	205	1,870	-	-	53	2,920	550	2,530
10/5/12	2	1,900	205	17,683,167	202	1,910	-	-	27	2,910	452	2,440
10/6/12	3	1,880	202	17,388,119	201	1,920	-	-	12	-	401	2,280
10/7/12	3	1,870	198	17,107,683	204	1,920	-	-	4	-	388	2,160
10/8/12	3	1,810	197	16,953,093	203	1,910	182	3,321,000	4	-	364	2,160
10/9/12	3	1,720	183	15,763,130	198	1,910	-	-	15	-	338	2,130
10/10/12	8	1,740	208	17,979,402	204	1,920	-	-	10	-	309	2,060
10/11/12	12	1,740	224	19,309,205	243	1,910	-	-	4	-	288	2,010
10/12/12	10	1,740	208	17,928,105	255	1,910	-	-	0	-	271	1,950
10/13/12	4	1,800	187	16,103,553	231	1,910	0	1,000	0	-	265	1,900
10/14/12	3	1,840	189	16,316,294	203	1,910	-	-	0	-	260	1,890
10/15/12	4	1,880	205	17,697,846	206	1,910	-	-	0	-	252	1,860
10/16/12	4	1,830	206	17,793,320	220	1,910	-	-	0	-	262	1,870
10/17/12	5	1,770	194	16,768,580	231	1,910	-	-	0	-	283	1,880
10/18/12	2	1,750	140	12,092,297	184	1,900	-	-	0	-	305	1,860
10/19/12	3	1,720	119	10,280,198	128	1,890	62	651,000	0	-	309	1,840
10/20/12	4	1,690	169	14,603,368	136	1,900	-	-	0	-	310	1,830
10/21/12	4	1,680	176	15,137,285	182	1,880	-	-	0	-	320	1,820
10/22/12	4	1,660	178	15,392,953	187	1,880	334	17,858,000	22	-	325	1,810
10/23/12	6	1,610	212	18,248,727	209	1,880	367	31,774,000	361	2,910	319	1,810
10/24/12	10	1,620	230	19,879,676	235	1,880	322	27,933,000	338	2,960	282	1,800
10/25/12	8	1,600	228	19,668,323	247	1,890	304	26,358,000	312	2,980	232	1,810
10/26/12	5	1,620	205	17,720,113	221	1,890	301	26,087,000	303	2,990	330	1,810
10/27/12	5	1,680	222	19,119,373	214	1,890	301	26,052,000	306	2,990	491	1,980
10/28/12	5	1,710	192	16,559,410	218	1,880	301	26,060,000	305	2,990	547	2,340
10/29/12	6	1,690	218	18,797,509	223	1,890	301	26,053,000	307	2,990	563	2,320
10/30/12	8	1,660	227	19,585,613	232	1,870	320	27,698,000	319	2,980	575	2,340
10/31/12	9	1,660	229	19,759,852	239	1,870	369	31,931,000	384	2,990	582	2,390
<b>Minimum</b>	0	1,600	119	10,280,198	128	1,870	0	1,000	0	2,910	232	1,800
<b>Maximum</b>	12	2,060	230	19,879,676	255	1,920	369	31,931,000	384	3,010	592	2,540
<b>Average</b>	5	1,767	200	17,251,297	209	1,897	248	18,129,875	108	2,971	385	2,081

<b>Total (ft³)</b>	534,790,208
<b>Total (Mgal)</b>	4,000
<b>Total (Ac-ft)</b>	12,277

<b>Total (ft³)</b>	290,078,000
<b>Total (Mgal)</b>	2,170
<b>Total (Ac-ft)</b>	6,659

**Notes:**

- cfs - cubic feet per second
- µS/cm - Microsiemens per Centimeter at 25 degrees Celsius
- ft³ - cubic feet
- Mgal - Millions of Gallons
- Ac ft - Acre Feet
- USGS streamflow and specific conductance data are preliminary and courtesy of the USGS



**Sheyenne River Upstream of West End Outlet near Flora**  
**Monthly Water Quality Summary**  
**Devils Lake Outlet Discharge Report**

Date	Time	Specific Conductance USGS Gage ( $\mu$ S/cm)	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling Average
10/1/12	-	-	-	-	-	-	-
10/2/12	8:15	1,960	8.36	652	653	37	7
10/3/12	-	-	-	-	-	-	-
10/4/12	-	-	-	-	-	-	-
10/5/12	-	-	-	-	-	-	-
10/6/12	-	-	-	-	-	-	-
10/7/12	-	-	-	-	-	-	-
10/8/12	-	-	-	-	-	-	-
10/9/12	8:00	1,740	8.40	556	556	NA	7
10/10/12	10:00	1,740	8.44	536	546	NA	7
10/11/12	-	-	-	-	-	-	-
10/12/12	-	-	-	-	-	-	-
10/13/12	-	-	-	-	-	-	-
10/14/12	-	-	-	-	-	-	-
10/15/12	-	-	-	-	-	-	-
10/16/12	8:00	1,840	8.44	560	548	33	7
10/17/12	-	-	-	-	-	-	-
10/18/12	-	-	-	-	-	-	-
10/19/12	-	-	-	-	-	-	-
10/20/12	-	-	-	-	-	-	-
10/21/12	-	-	-	-	-	-	-
10/22/12	-	-	-	-	-	-	-
10/23/12	8:05	-	8.47	479	479	NA	7
10/24/12	-	-	-	-	-	-	-
10/25/12	9:25	1,600	8.49	462	471	NA	7
10/26/12	-	-	-	-	-	-	-
10/27/12	-	-	-	-	-	-	-
10/28/12	-	-	-	-	-	-	-
10/29/12	-	-	-	-	-	-	-
10/30/12	8:10	-	8.47	503	483	17	7
10/31/12	-	-	-	-	-	-	-
<b>Minimum</b>		1,600	8.36	462	471	17	
<b>Maximum</b>		1,960	8.49	652	653	37	
<b>Average</b>		1,776	8.44	535	534	29	

**Notes:**

$\mu$ S/cm - Microsiemens per Centimeter at 25 degrees Celsius  
mg/L - Milligrams per liter or parts per million  
NA - Not Analyzed  
USGS specific conductance data courtesy of the USGS  
USGS data are provisional and subject to revision





**West End Outlet  
Monthly Water Quality Summary  
Devils Lake Outlet Discharge Report**

Date	Time	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling Average
10/1/12	-	-	-	-	-	-
10/2/12	8:25	8.56	602	590	25	7
10/3/12	-	-	-	-	-	-
10/4/12	-	-	-	-	-	-
10/5/12	-	-	-	-	-	-
10/6/12	-	-	-	-	-	-
10/7/12	-	-	-	-	-	-
10/8/12	-	-	-	-	-	-
10/9/12	8:10	8.54	586	586	NA	7
10/10/12	10:10	8.63	592	589	NA	7
10/11/12	-	-	-	-	-	-
10/12/12	-	-	-	-	-	-
10/13/12	-	-	-	-	-	-
10/14/12	-	-	-	-	-	-
10/15/12	-	-	-	-	-	-
10/16/12	8:13	8.56	591	592	24	7
10/17/12	-	-	-	-	-	-
10/18/12	-	-	-	-	-	-
10/19/12	-	-	-	-	-	-
10/20/12	-	-	-	-	-	-
10/21/12	-	-	-	-	-	-
10/22/12	-	-	-	-	-	-
10/23/12	8:18	8.54	594	594	NA	7
10/24/12	-	-	-	-	-	-
10/25/12	9:35	8.59	601	598	NA	7
10/26/12	-	-	-	-	-	-
10/27/12	-	-	-	-	-	-
10/28/12	-	-	-	-	-	-
10/29/12	-	-	-	-	-	-
10/30/12	8:25	8.52	581	591	14	7
10/31/12	-	-	-	-	-	-
<b>Minimum</b>		8.52	581	586	14	
<b>Maximum</b>		8.63	602	598	25	
<b>Average</b>		8.56	592	591	21	

**Notes:**

mg/L - Milligrams per liter or parts per million  
NA - Not Analyzed



**Sheyenne River Downstream of West End Outlet/Upstream of East End Outlet near Bremen  
Monthly Water Quality Summary  
Devils Lake Outlet Discharge Report**

Date	Time	Specific Conductance USGS Gage (µS/cm)	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling Average
10/1/12	-	-	-	-	-	-	-
10/2/12	7:40	1,900	8.53	591	593	47	7
10/3/12	-	-	-	-	-	-	-
10/4/12	-	-	-	-	-	-	-
10/5/12	-	-	-	-	-	-	-
10/6/12	-	-	-	-	-	-	-
10/7/12	-	-	-	-	-	-	-
10/8/12	-	-	-	-	-	-	-
10/9/12	7:35	1,920	8.51	591	591	NA	7
10/10/12	9:40	1,930	8.54	593	592	NA	7
10/11/12	-	-	-	-	-	-	-
10/12/12	-	-	-	-	-	-	-
10/13/12	-	-	-	-	-	-	-
10/14/12	-	-	-	-	-	-	-
10/15/12	-	-	-	-	-	-	-
10/16/12	7:31	1,920	8.53	598	596	52	7
10/17/12	-	-	-	-	-	-	-
10/18/12	-	-	-	-	-	-	-
10/19/12	-	-	-	-	-	-	-
10/20/12	-	-	-	-	-	-	-
10/21/12	-	-	-	-	-	-	-
10/22/12	-	-	-	-	-	-	-
10/23/12	7:40	1,880	8.51	593	593	NA	7
10/24/12	-	-	-	-	-	-	-
10/25/12	9:00	1,890	8.56	596	595	NA	7
10/26/12	-	-	-	-	-	-	-
10/27/12	-	-	-	-	-	-	-
10/28/12	-	-	-	-	-	-	-
10/29/12	-	-	-	-	-	-	-
10/30/12	7:45	1,870	8.52	596	596	36	7
10/31/12	-	-	-	-	-	-	-
<b>Minimum</b>		1,870	8.51	591	591	36	
<b>Maximum</b>		1,930	8.56	598	596	52	
<b>Average</b>		1,901	8.53	594	594	45	

**Notes:**

µS/cm - Microsiemens per Centimeter at 25 degrees Celsius  
mg/L - Milligrams per liter or parts per million  
NA - Not Analyzed  
USGS specific conductance data courtesy of the USGS  
USGS data are provisional and subject to revision



**East End Outlet  
Monthly Water Quality Summary  
Devils Lake Outlet Discharge Report**

Date	Time	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling Average
10/1/12	-	-	-	-	-	-
10/2/12	9:42	8.35	1030	1030	5	-
10/3/12	-	-	-	-	-	-
10/4/12	-	-	-	-	-	-
10/5/12	-	-	-	-	-	-
10/6/12	-	-	-	-	-	-
10/7/12	-	-	-	-	-	-
10/8/12	-	-	-	-	-	-
10/9/12	-	-	-	-	-	-
10/10/12	-	-	-	-	-	-
10/11/12	-	-	-	-	-	-
10/12/12	-	-	-	-	-	-
10/13/12	-	-	-	-	-	-
10/14/12	-	-	-	-	-	-
10/15/12	-	-	-	-	-	-
10/16/12	-	-	-	-	-	-
10/17/12	-	-	-	-	-	-
10/18/12	-	-	-	-	-	-
10/19/12	-	-	-	-	-	-
10/20/12	-	-	-	-	-	-
10/21/12	-	-	-	-	-	-
10/22/12	-	-	-	-	-	-
10/23/12	9:35	8.59	1040	1040	NA	-
10/24/12	-	-	-	-	-	-
10/25/12	11:35	8.65	1040	1040	NA	-
10/26/12	-	-	-	-	-	-
10/27/12	-	-	-	-	-	-
10/28/12	-	-	-	-	-	-
10/29/12	-	-	-	-	-	-
10/30/12	9:40	8.59	1050	1045	7	-
10/31/12	12:00	8.67	1040	1043	NA	-
<b>Minimum</b>		8.35	1030	1030	5	
<b>Maximum</b>		8.67	1050	1045	7	
<b>Average</b>		8.57	1040	1040	6	

**Notes:**

mg/L - Milligrams per liter or parts per million  
NA - Not Analyzed



**Sheyenne River Downstream of East End Outlet near Pekin  
Monthly Water Quality Summary  
Devils Lake Outlet Discharge Report**

Date	Time	pH	Sulfate (mg/L)	7 Day Rolling Average of Sulfate (mg/L)	Total Suspended Solids (mg/L)	No. of days included in the 7 day Rolling Average
10/1/12	-	-	-	-	-	-
10/2/12	10:35	8.48	737	<b>793</b>	40	7
10/3/12	-	-	-	-	-	-
10/4/12	-	-	-	-	-	-
10/5/12	-	-	-	-	-	-
10/6/12	-	-	-	-	-	-
10/7/12	-	-	-	-	-	-
10/8/12	-	-	-	-	-	-
10/9/12	9:30	8.44	543	543	NA	7
10/10/12	13:10	8.49	535	539	NA	7
10/11/12	-	-	-	-	-	-
10/12/12	-	-	-	-	-	-
10/13/12	-	-	-	-	-	-
10/14/12	-	-	-	-	-	-
10/15/12	-	-	-	-	-	-
10/16/12	10:00	8.48	578	557	31	7
10/17/12	-	-	-	-	-	-
10/18/12	-	-	-	-	-	-
10/19/12	-	-	-	-	-	-
10/20/12	-	-	-	-	-	-
10/21/12	-	-	-	-	-	-
10/22/12	-	-	-	-	-	-
10/23/12	10:05	8.42	540	540	NA	7
10/24/12	-	-	-	-	-	-
10/25/12	12:00	8.49	751	646	NA	7
10/26/12	-	-	-	-	-	-
10/27/12	-	-	-	-	-	-
10/28/12	-	-	-	-	-	-
10/29/12	-	-	-	-	-	-
10/30/12	10:10	8.43	808	<b>780</b>	16	7
10/31/12	12:30	8.52	801	<b>787</b>	NA	7
<b>Minimum</b>		8.42	535	539	16	
<b>Maximum</b>		8.52	808	793	40	
<b>Average</b>		8.47	662	648	29	

**Notes:**

mg/L - Milligrams per liter or parts per million

NA - Not Analyzed

**Bold font and gray shading denotes sample sulfate concentration exceeds 750 mg/L**

