2007 Water Quality Monitoring Report

CRWD

Prepared for

Clearwater River Watershed District

Wenck

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2007 Water Quality Monitoring Report

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Prepared for:

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1 Phase II Addendum Project Report to the MPCA: Grass Lake and the Mississippi River DO TMDL
2 Phase II Project Report to the MPCA: Lake Louisa Nutrient TMDL and The Clearwater River, Clear Lake to Lake Betsy Bacteria and Dissolved Oxygen TMDL

1.0 Introduction

The Clearwater River Watershed District (CRWD) has conducted a stream, precipitation, and lake monitoring program since 1980. The monitoring program has focused on collecting baseline data to assess long-term water quality trends within the CRWD. Appendix A describes the 2007 monitoring program in detail, Figure 1.1 shows the monitoring locations.

In 2003 the CRWD, in partnership with the Minnesota Pollution Control Agency, began a Total Maximum Daily Load (TMDL) study to address the District's impaired waters. As demonstrated in Appendix B and Appendix C, lake water quality has improved dramatically and in stream nutrient and sediment loads were reduced as the result of the Chain of Lakes Restoration Project and other District initiatives. However, some water bodies do not meet state water quality standards. TMDL Studies are on-going for the following waters (Figure 1.2 shows locations):

- Clearwater River between Clear Lake and Lake Betsy for dissolved oxygen (DO) and fecal coliform bacteria,
- Clearwater River between Grass Lake and the Mississippi River for DO, and
- Lake Louisa for nutrients.

Data was collected during the 2007 season for the DO TMDL for the Clearwater River between Grass Lake and the Mississippi River. These data are presented in a report to the MPCA: "Phase II Addendum Project Report to the MPCA: Grass Lake and the Mississippi River DO TMDL" (see Attachment 1). Data for the other 303d-listed waters was collected during the 2005 and 2006 field seasons. These data are presented in the report: "Phase II Project Report to the MPCA: Lake Louisa Nutrient TMDL and The Clearwater River, Clear Lake to Lake Betsy Bacteria and Dissolved Oxygen TMDL" (see Attachment 2). These reports can be found in an electronic format on CDs enclosed in this report following the appendices.

Ten other CRWD Lakes were added to the 2008 303d Impaired Waters List at the request of the CRWD including Clear Lake, Lake Betsy, Union Lake, Scott Lake, Lake Marie, Lake Augusta, Lake Caroline, Swartout Lake, Albion Lake, and Henshaw Lake. The TMDLs for these lakes will be set using existing data where appropriate in Phase III of the ongoing TMDL study. Monitoring locations for the 2007 program included two long-term stations: CR-28.2 in the upper watershed just upstream of Lake Betsy and CR-10.5 in the lower watershed, downstream of Clearwater Lake. Warner Creek was also monitored near its inflow to Clearwater Lake at WR-0.2. The inlet and outlet of Union Lake were also monitored.

Eight lakes were monitored by CRWD including Lake Augusta, Betsy Lake, Clearwater Lake East, Lake Louisa, Otter Lake, Pleasant Lake, School Section Lake, and Union Lake.

Citizen Precipitation Recorders (CPRs) collecting precipitation data in Watkins and Annandale comprise the precipitation records. Citizen volunteers also collected Secchi depths for nine CRWD lakes.

Continuous stream flow was measured by the MPCA on the Clearwater River at Fairhaven and CSAH 40, and the provisional for the Fairhaven station is reported.

Additional monitoring was also conducted in the Cedar Lake subwatershed in 2007. Samples were collected from four lakes, including Albion Lake, Cedar Lake, Henshaw Lake, and Swartout Lake. Samples were also collected from eight tributary streams in the subwatershed.

Figure 1.1 2007 Monitoring Locations

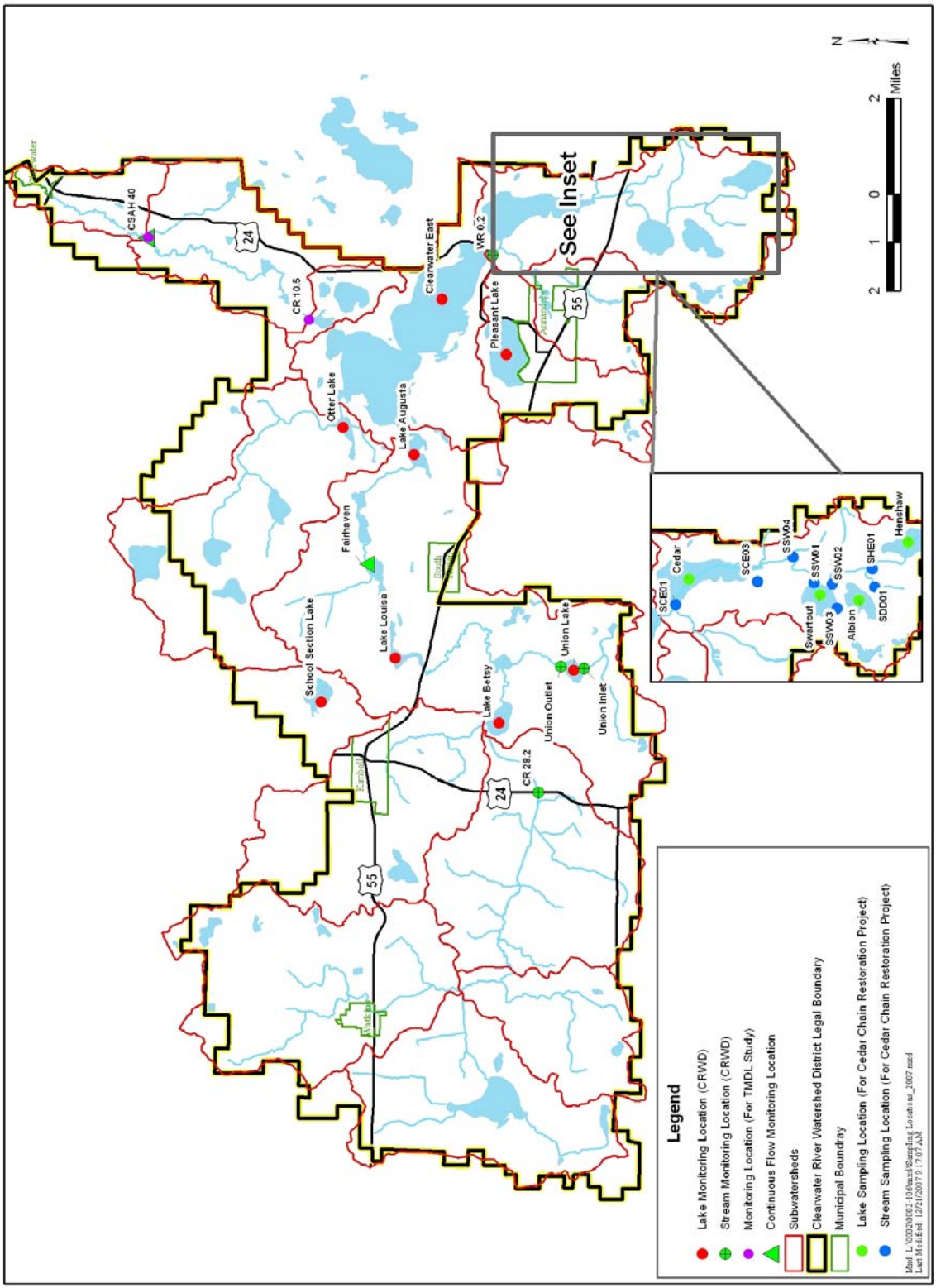
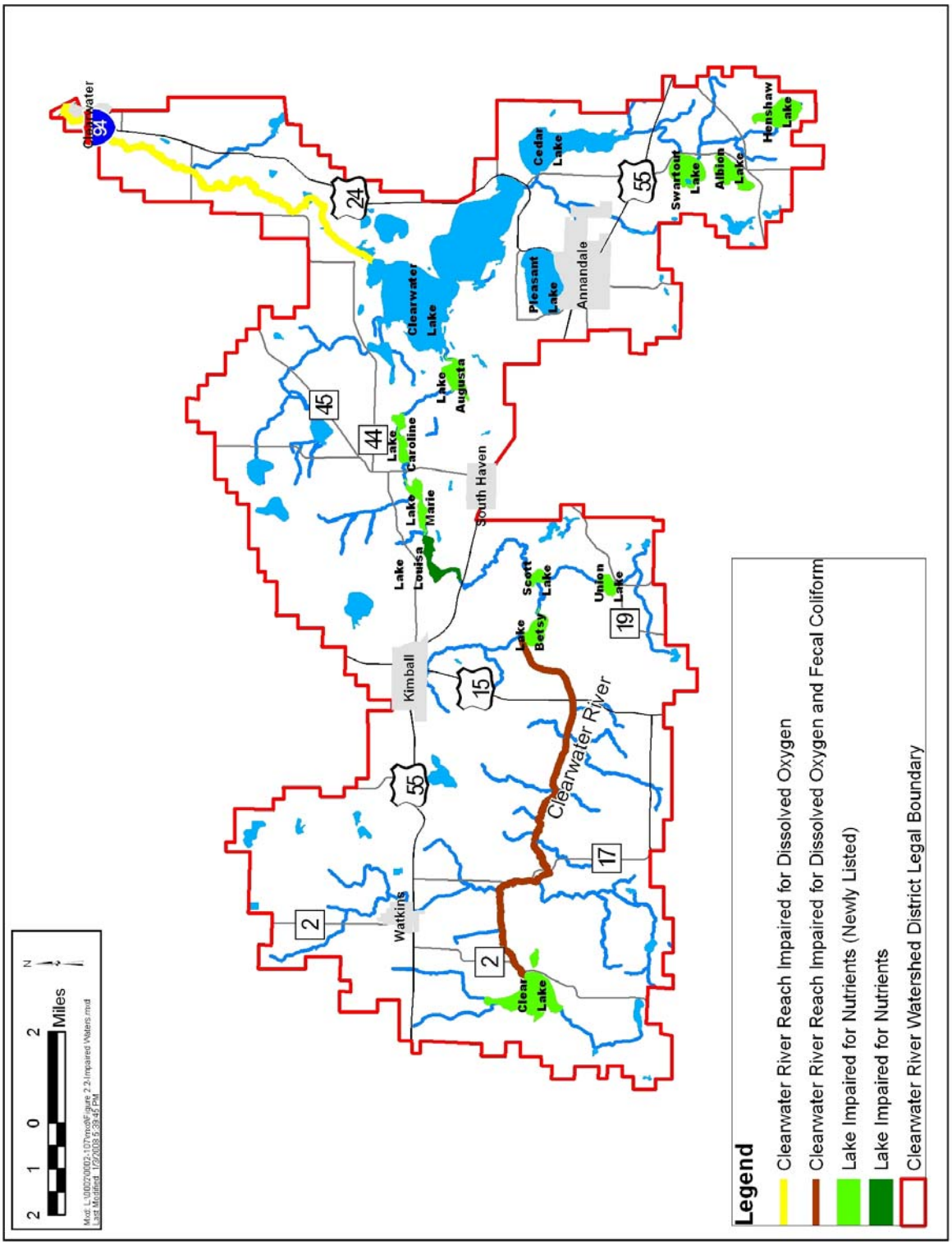


Figure 1.2 Impaired Water Bodies in CRWD



2.0 Precipitation

Precipitation during 2007 was below normal overall, but was above normal during February, March, August, September, October, and December. Table 2.1 and Figures 2.1-2.3 show the precipitation records for the CRWD (Appendix D).

Table 2.1 Clearwater River Watershed District 2007 Precipitation Records and Normals (inches)

	2007 St. Cloud (Saint Cloud WSO Airport)	2007 Collegeville St. Johns	1971-2000 Normal (St. Cloud)	2007 Watkins (Meeker)*	1971-2000 Normal (Litchfield)	2007 Annandale/ Corinna (Wright)	1971-2000 Normal (Cokato)
January	0.16	0.25	0.76	0.18	0.79	0.39	0.93
February	1.42	1.71	0.59	1.97	0.67	0.69	0.70
March	3.33	3.84	1.50	3.14	1.55	2.29	1.69
April	1.69	2.7	2.13	2.07	2.35	1.78	2.33
May	1.3	1.79	2.97	1.04	3.37	2.37	3.30
June	2.92	2.05	4.51	1.96	4.89	2.29	4.62
July	1.63	1.17	3.34	3.23	4.02	1.84	4.04
August	4.14	6.1	3.93	4.65	3.67	4.97	4.00
September	4.1	3.22	2.93	3.74	2.92	5.20	2.78
October	4.11	5.2	2.24	3.76	2.15	4.79	2.23
November	0.01	0.03	1.54	0.00	1.50	0.02	1.73
December	1.01	1.35	0.69	0.84	0.68	1.19	0.71
Total	25.82	29.41	27.13	26.58	28.56	27.82	29.06

Figure 2.1 2007 St. Cloud and Collegeville Precipitation Records, and Normal Precipitation Record (inches)

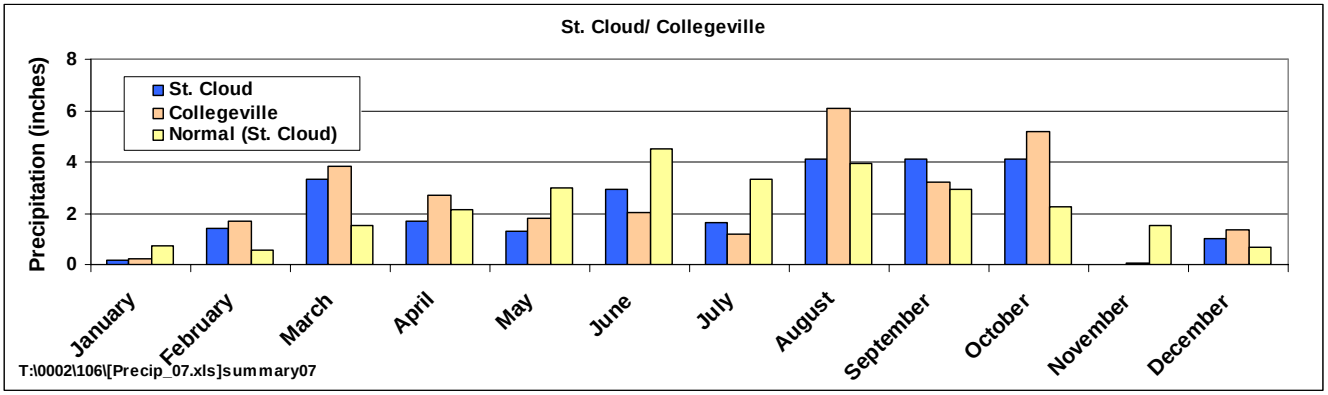


Figure 2.2 2007 Watkins Citizen Precipitation Record and Normal Precipitation Record (inches)

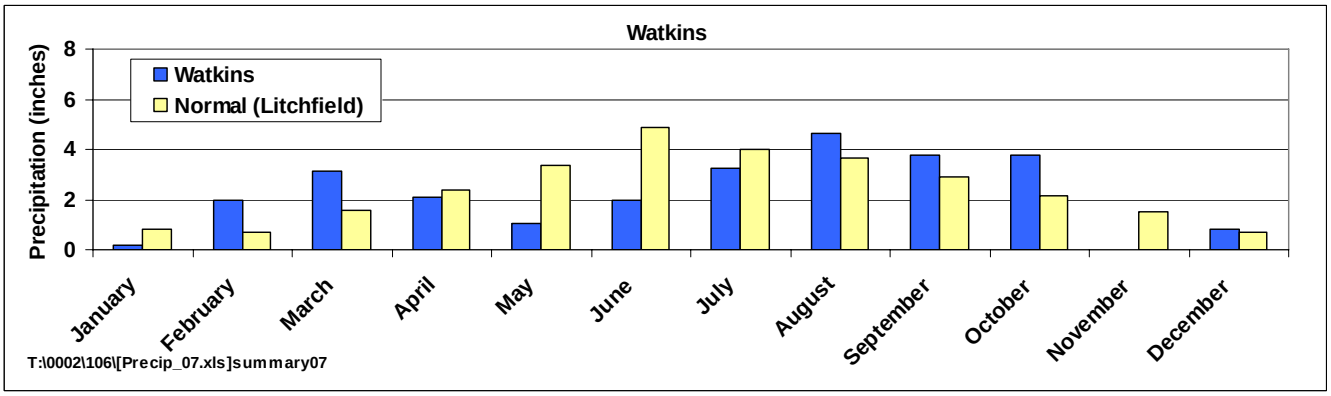
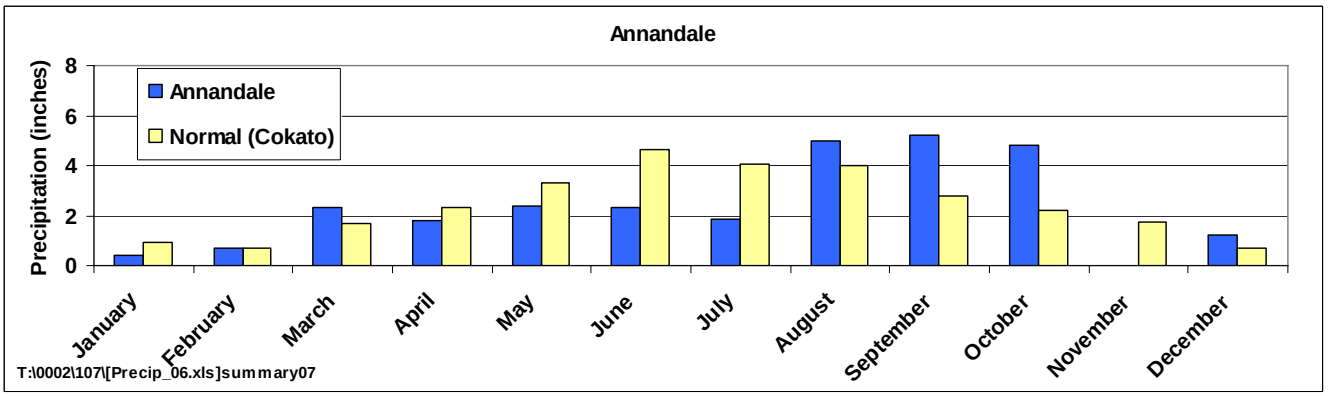


Figure 2.3 2006 Annandale Citizen Precipitation Record and Normal Precipitation Record (inches)

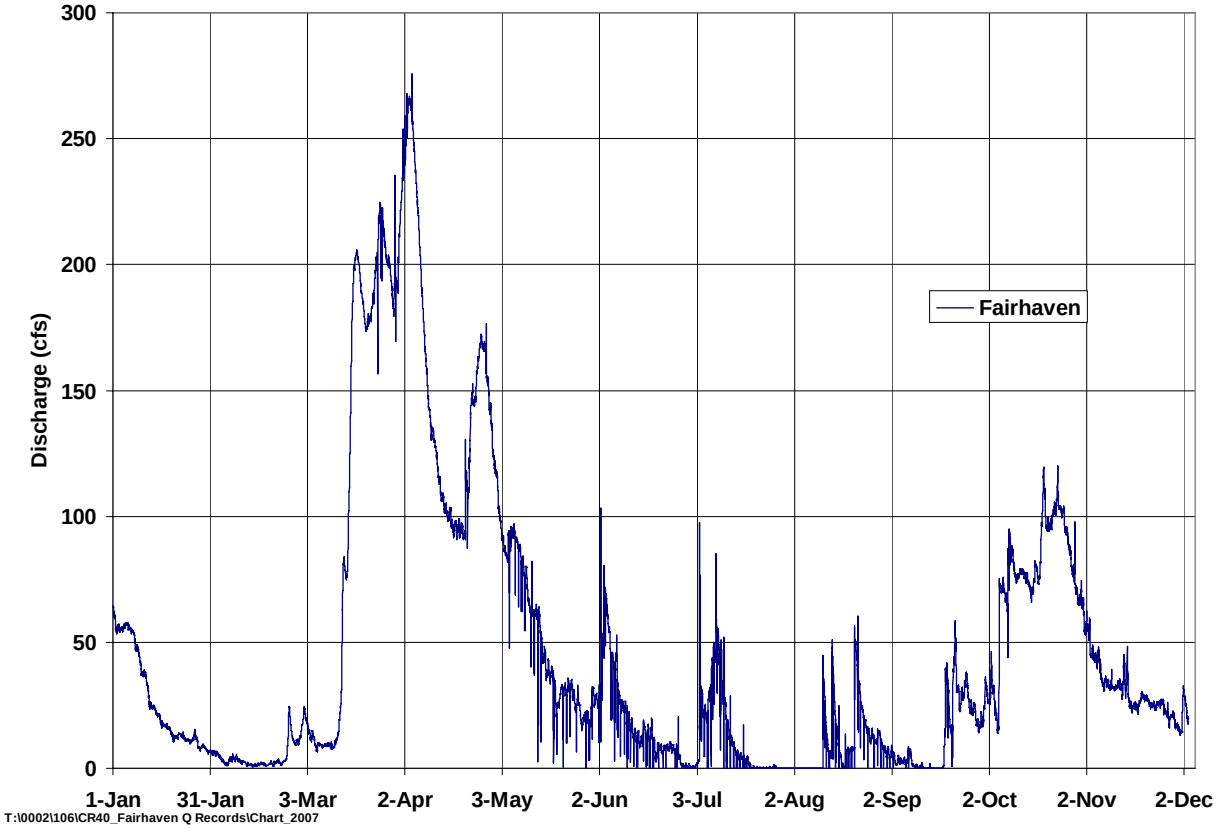


3.0 Streams

3.1 RUNOFF AND DISCHARGE

In 2007, the MPCA maintained continuous stage recorders on the Clearwater River at the Fairhaven Dam, located at the outlet of Lake Marie near the center of the watershed, and at the Clearwater River at CSAH 40 at the downstream end of the watershed (Figure 1.1). Figure 3.1 shows the provisional flow record for the Fairhaven Dam; the complete flow record for CSAH 40 was not available at the time of this report.

Figure 3.1 Clearwater River Discharge at Fairhaven Dam, 2007



Runoff over the upper watershed was 1.0 inch at CR 28.2. Runoff may have been under predicted at CR 28.2, since monitoring is weighted towards summer (April-July), which was drier than normal in 2007. Runoff was 6.2 inches at Fairhaven Dam in the center of the watershed, 3.0 inches at CR10.5, and 4.8 inches at CSAH 40 at the downstream end of the watershed. It is likely that the runoff at Fairhaven Dam (6.2 inches) is high compared to the runoff at CR10.5 (3.5) and CSAH 40 (4.8 inches) due to the storage in the lakes between the two stations.

Average flows at the Fairhaven Dam, CR10.5 and CSAH 40 were 41cfs, 34 cfs and 50 cfs respectively. Table 3.1 summarizes the runoff volumes and average flows for the automated stations, and Figure 3.2 compares the long-term precipitation to runoff for the CRWD as recorded at CR 10.5.

Table 3.1 2007 Runoff Volume and Average Flow

	2007			
Station/ Location	**Tributary Sub-watershed Area (acres)**	**Runoff Volume (ac-ft)**	**Runoff Over Watershed (inches)**	**Average Flow (cfs)**
CR28.2*	33,977	2,726	1.0	5
Fairhaven Dam	58,291	29,972	6.2	41
CR10.5	99,200	24,707	3.0	34
CR 40	105,272	42,210	4.8	50

T:\0002\106\CR40_Fairhaven Q Records Summary Tables

***Runoff at CR28.2 was likely under predicted due to below average precipitation during the monitoring period in 2007.

Figure 3.2 Clearwater River Watershed District, Historical Precipitation and Runoff (At CR 10.5)

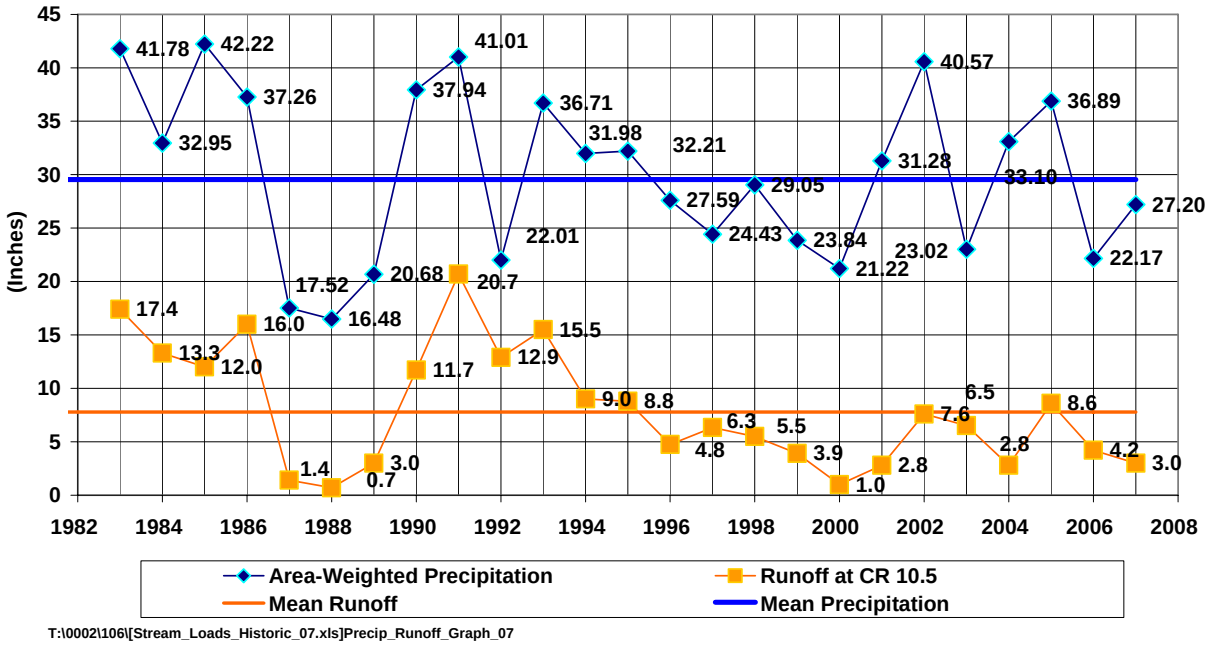


Table 3.2 compares historic annual precipitation and runoff in the CRWD calculated using discrete flow measurements collected at CR 10.5 as part of the TMDL project. Supplemental information from the CSAH 40 station maintained by the MPCA was used to determine the period during which the Clearwater River was flowing during 2007.

Table 3.2 Historic Annual Precipitation and Runoff Volume at CR 10.5

Precipitation (inches of water)											
Year	**Watkins**		**Kingston**		**Maine Prairie**		**Annandale/ Corinna**		**Area-Weighted Precipitation Average**		**Runoff (inches)**
1981	--		--		--		--		19.76	(1)	3.6
1982	--		--		--		--		24.58	(1)	6.8
1983	46.54		--		42.32		35.02		41.78		17.4
1984	32.23		30.13		32.37		36.07		32.95		13.3
1985	40.72		39.49		45.28		--		42.22		12.0
1986	40.02		35.63		39.68		33.40		37.26		16.0
1987	18.97		15.40		19.41		16.16		17.52		1.4
1988	16.57		18.98		15.96		15.01		16.48		0.7
1989	22.13		22.68		21.80		16.96		20.68		3.0
1990	40.35		39.18		41.36		32.18		37.94		11.7
1991	41.30		45.11		43.41		36.28		41.01		20.7
1992	23.06		18.41		20.47		24.35		22.01		12.9
1993	40.17		35.27	(2)	37.54	(2)	33.33		36.71		15.5
1994	34.77		--		30.13		30.26		31.98		9.0
1995	33.80		--		33.65		28.66		32.21		8.8
1996	31.31		--		24.32	(2)	26.13	(2)	27.59		4.8
1997	24.18		--		21.90		27.37		24.43		6.3
1998	30.03		--		29.39		27.43	(2)	29.05		5.5
1999	22.08		--		22.31	(2)	27.71		23.84		3.9
2000	23.83		--		20.56		19.91		21.22		1.0
2001	31.00		--		33.56		29.57		31.28		2.8
2002	37.50		--		40.27		44.72		40.57		7.6
2003	22.63		--		21.34		26.77	(2)	23.02		6.5
2004	33.58		--		33.58		31.67		33.10		2.8
2005	32.30	(2)	--		--		41.47		36.89	(4)	7.1
2006	22.59		--		--		24.15		23.37		4.2
2007	26.58		--		--		27.82		27.20		3.5
								Mean	**29.59**		**7.7**
								Std. Dev.	**8.1**		**5.4**

T:\0002\106\[Precip_Runoff_07.xls]Historical Runoff_07

Table 3.2 Notes: Whole watershed runoff is based on time-weighted average flow at Clearwater Lake outlet (station CR 10.5), and total drainage area of 155 square miles.

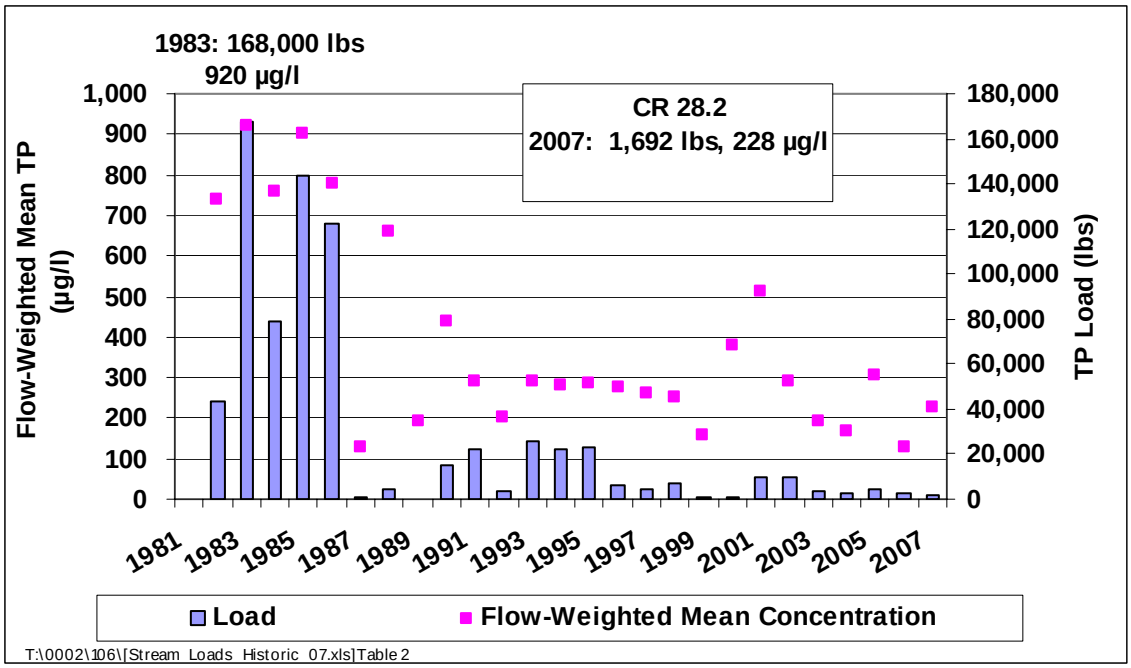
1. *Data for single gauge in east-central part of watershed (Camp Heritage on Lake Caroline).*
2. *Average values of other stations in CRWD were used to fill in missing data.*
3. *Location of Watkins Station changed slightly*
4. *Calculated using continuous flow data from MPCA at CSAH 40*

3.2 WATER QUALITY

Baseline total phosphorus (TP) concentrations in the Clearwater River remain low as compared with conditions monitored in the early 1980s. Flow-weighted mean total phosphorus concentrations at CR 28.2, just upstream of Lake Betsy, ranged from 740 to 920 µg/l in the early 1980s but were 228 µg/l in 2007. The TP load at CR 28.2 in 2007 was 1,692 lbs. Although

there has been some fluctuation in recent years, TP concentrations at CR 28.2 have been declining overall. Figure 3.3 shows the historical phosphorus load at CR 28.2.

Figure 3.3 Historical Total Phosphorus Loading and Mean Concentration at CR 28.2



Flow-weighted mean TP concentrations at CR-10.5 and WR-0.2 were 31 µg/l and 64 µg/l respectively. Total phosphorus loads were 2,057 lbs at CR 10.5 and 76 lbs at WR 0.2, well below historic levels (Figures 3.4 and 3.5). TP concentrations have been declining and have remained stable at both CR 10.5 and WR 0.2 since the early 1990s.

Figure 3.4 Historical Total Phosphorus Loading and Mean Concentration at CR 10.5

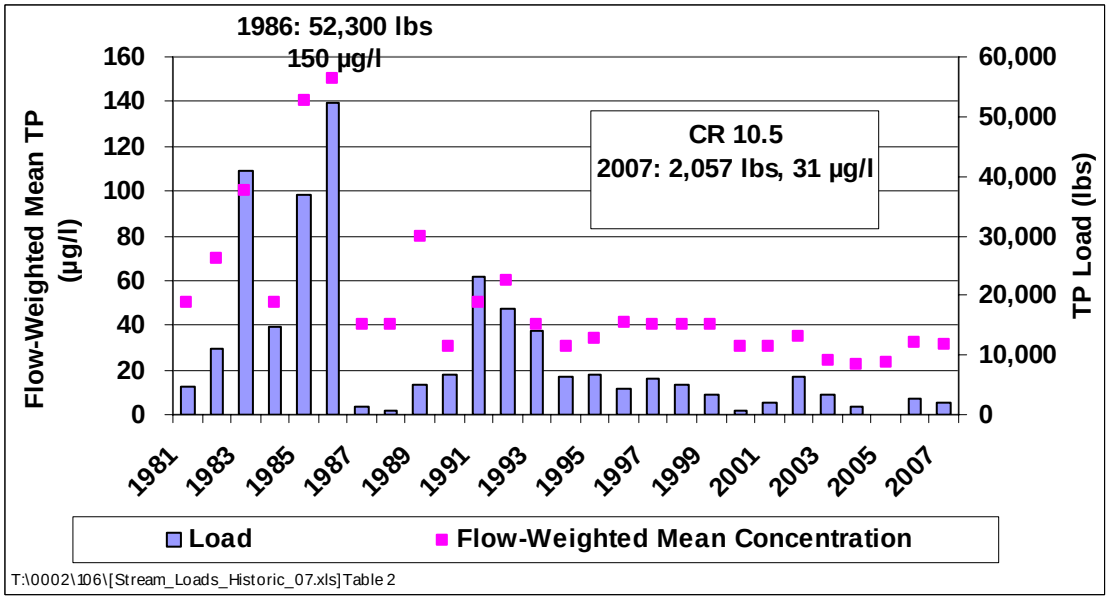
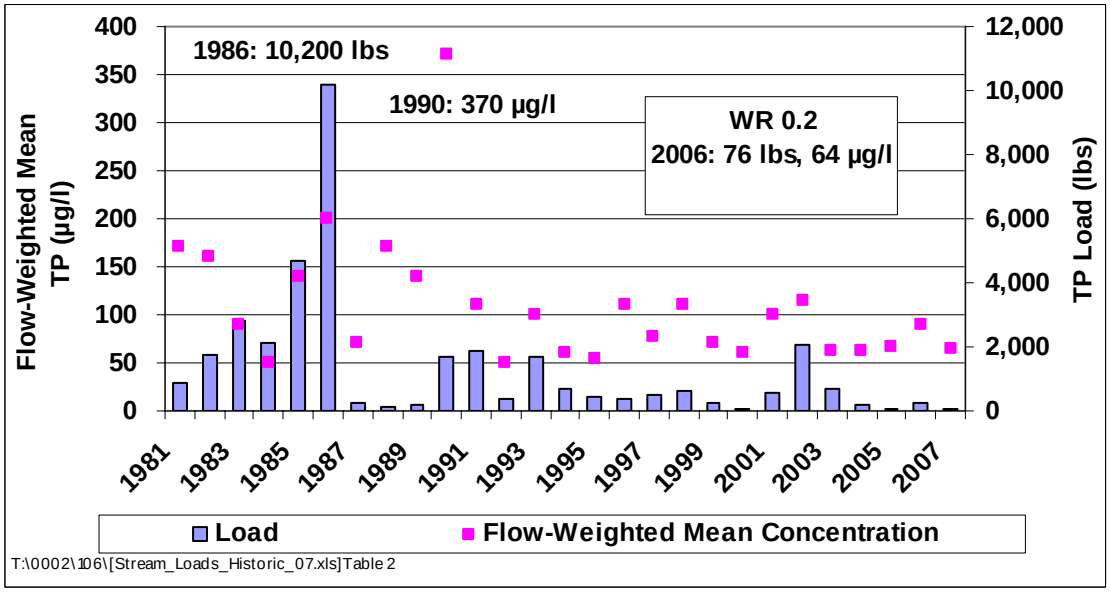


Figure 3.5 Historical Total Phosphorus Loading and Mean Concentration at WR-0.2



Soluble reactive phosphorus (SRP) (dissolved form of phosphorus easily utilized by algae) was also monitored. At CR 28.2, SRP was between 9% and 75% of the total fraction, with the highest ratio of 75% occurring in early summer. SRP was below the detection limit and therefore represented a very low percentage of the total phosphorus at CR 10.5 for all but one

event in July for which the ratio was 81%. The ratio at station WR 0.2 ranged from 38% to 66% increasing in the late summer and early fall. These values are higher than observed historically, likely due to low flow in 2007. The values potentially indicate the export of soluble phosphorus from wetlands in the upper watershed.

Appendix B shows historical phosphorus loads, stream flows, and flow-weighted mean concentrations.

4.0 2007 Lake Water Quality

4.1 REGULAR MONITORING

CRWD lakes are sampled on a rotating basis. Lake Augusta, Lake Betsy, Clearwater Lake, Lake Louisa, Otter Lake, Pleasant Lake, School Section, and Union Lake were each sampled four times from June to September in 2007. Albion Lake, Cedar Lake, Henshaw Lake, and Swartout Lake were also sampled four times each as part of the monitoring performed in the Cedar Lake subwatershed. Parameters analyzed include total phosphorus, soluble reactive phosphorus, chlorophyll-a, and a field reading of secchi depth. Lake profiles of lake water temperature and dissolved oxygen were also collected.

Water quality of the lakes monitored in 2007 was generally comparable to monitoring in recent years. Summer average (June 1-September 30) values were compared with the MCPA eutrophication standards for phosphorus, chlorophyll-a, and Secchi disk depth, based on ecoregion and lake type. The MPCA uses separate standards for shallow (less than 15 foot maximum depth or 80% of lake area less than 15 feet deep) and deep lakes (greater than 15 foot maximum depth). The appropriate standards for lakes monitored in the CRWD, which is in the North Central Hardwood Forest ecoregion, are shown in Table 4.1.

Table 4.1 MPCA Standards for Lakes in the North Central Hardwood Forest Ecoregion

	Total Phosphorus	Chlorophyll-a	Secchi Depth
Lake Category	**µg/L**	**µg/L**	**meters (not less than)**
Shallow Lakes	60	20	1
Deep Lakes	40	14	1.4
Source: Minnesota Pollution Control Agency			

Figures 4.1 and 4.2 compare the average total phosphorus concentrations in lakes sampled in 2007 to the MPCA phosphorus standard.

Figure 4.1 2007 Summer Average Total In-Lake Phosphorus Concentrations (Deep Lakes)

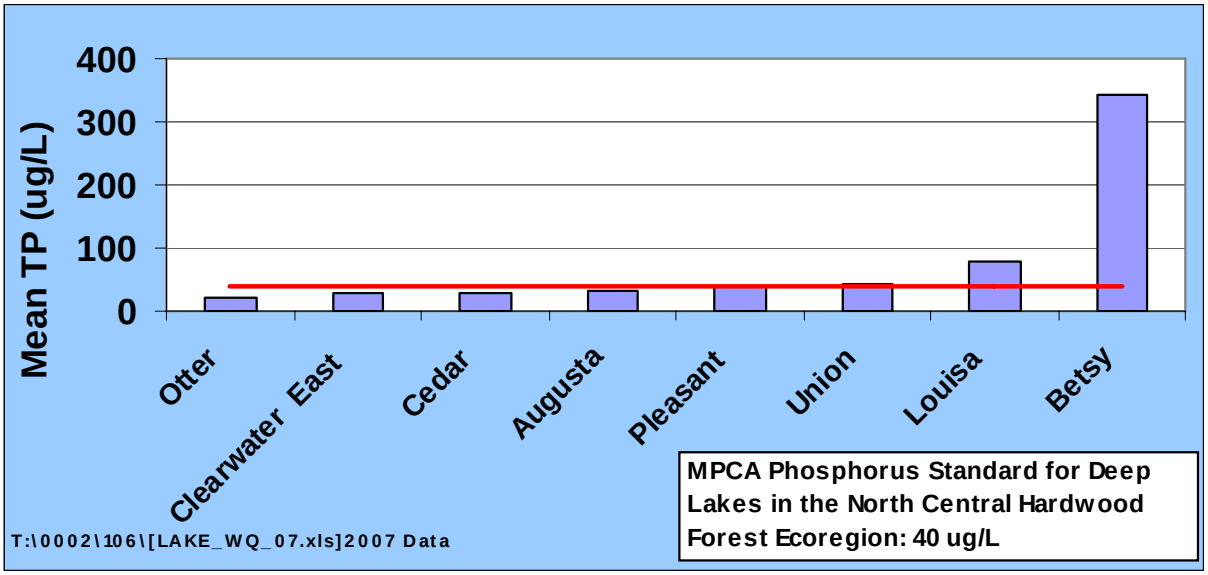


Figure 4.2 2007 Summer Average Total In-Lake Phosphorus Concentrations (Shallow Lakes)

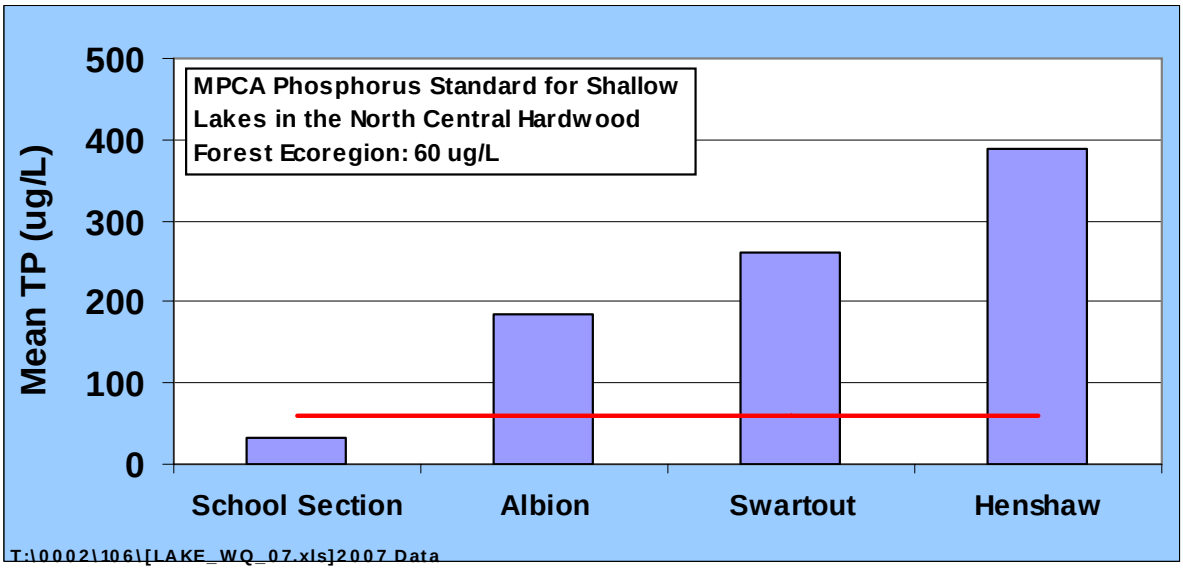
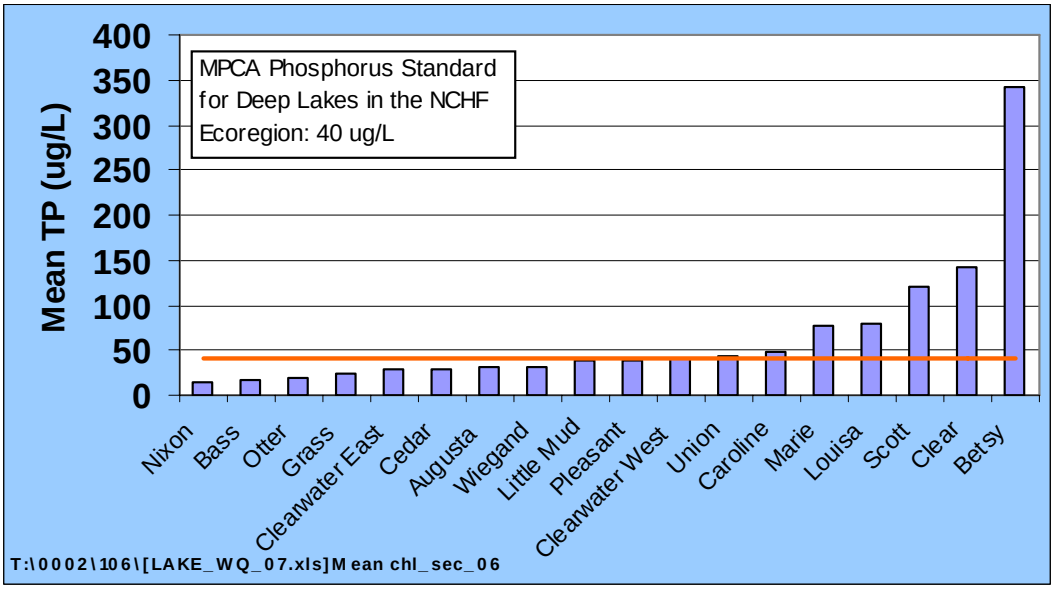


Figure 4.3 compares the most recent average total phosphorus concentration to the standard for deep lakes. Since all four shallow lakes monitored by the CRWD were monitored in 2007, Figure 4.2 compares the average total phosphorus concentration to the standard for shallow

lakes. Based on the most recent monitoring data for each lake, Union, Caroline, Marie, Louisa, Scott, Clear, Betsy, Albion, Swartout, and Henshaw Lakes are impaired for total phosphorus.

Figure 4.3 Summer Average Total In-Lake Phosphorus Concentrations Most Recent Monitoring Data (Deep Lakes)



Figures 4.4 and 4.5 compare the most recent summer average chlorophyll-a concentration for all CRWD lakes to the appropriate chlorophyll standard. The most recent average chlorophyll-a concentrations in Augusta, Clearwater West, Caroline, Clear, Scott, Betsy, Marie, Louisa, Albion, Swartout, and Henshaw Lakes are above the standard for chlorophyll-a.

Figure 4.4 Summer Average Chlorophyll-a Concentrations, Most Recent Monitoring Data (Deep Lakes)

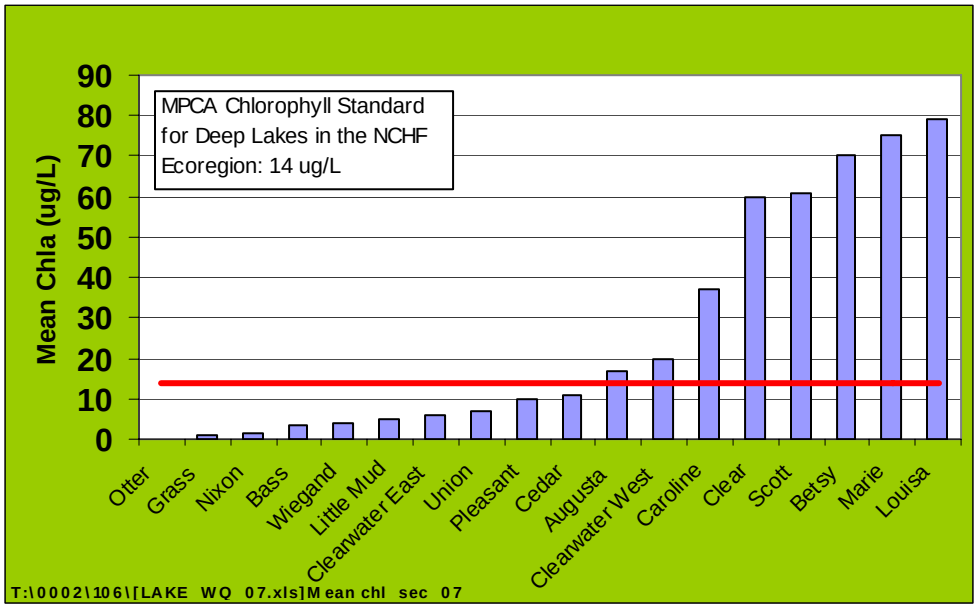
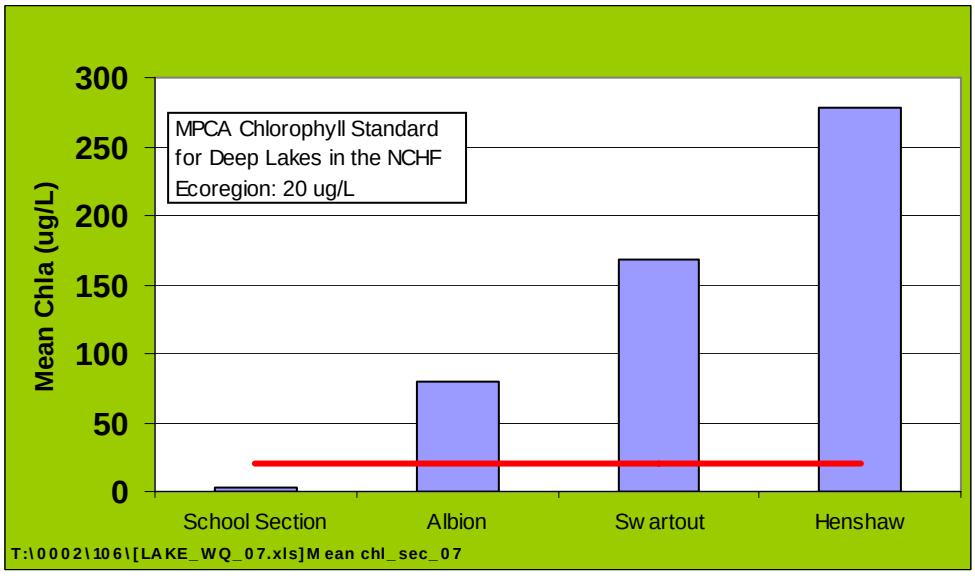


Figure 4.5 Summer Average Chlorophyll-a Concentration,s Most Recent Monitoring Data (Shallow Lakes)



Figures 4.6 and 4.7 compare the most recent average Secchi disk depth for all CRWD lakes to the appropriate Secchi standard. The most recent average Secchi depths demonstrate that Bass, Louisa, Clear, Scott, Betsy, Swartout, and Henshaw Lakes are below the Secchi depth standard.

Figure 4.6 Summer Average In-Lake Secchi Depth, Most Recent Monitoring Data (Deep Lakes)

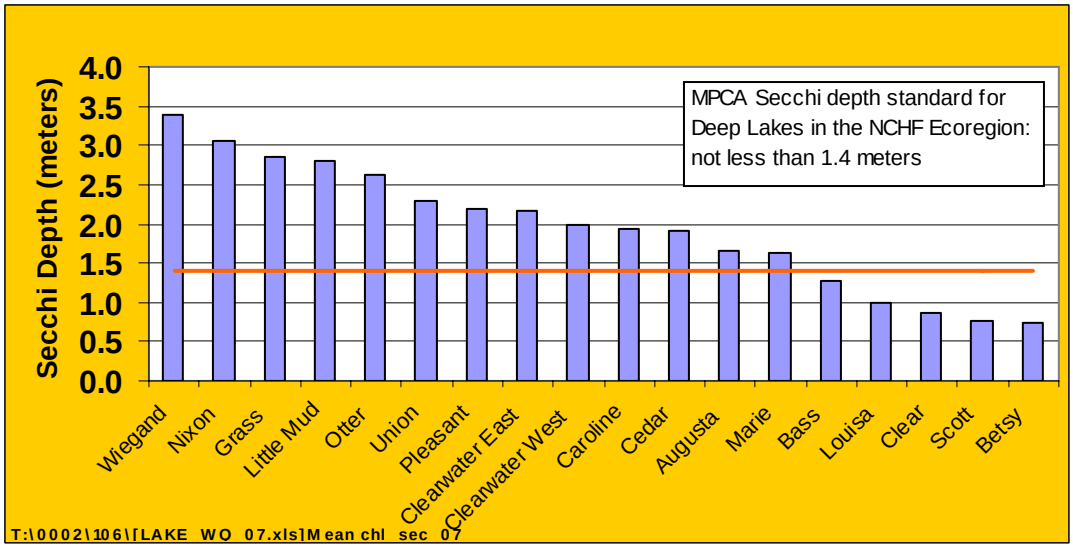
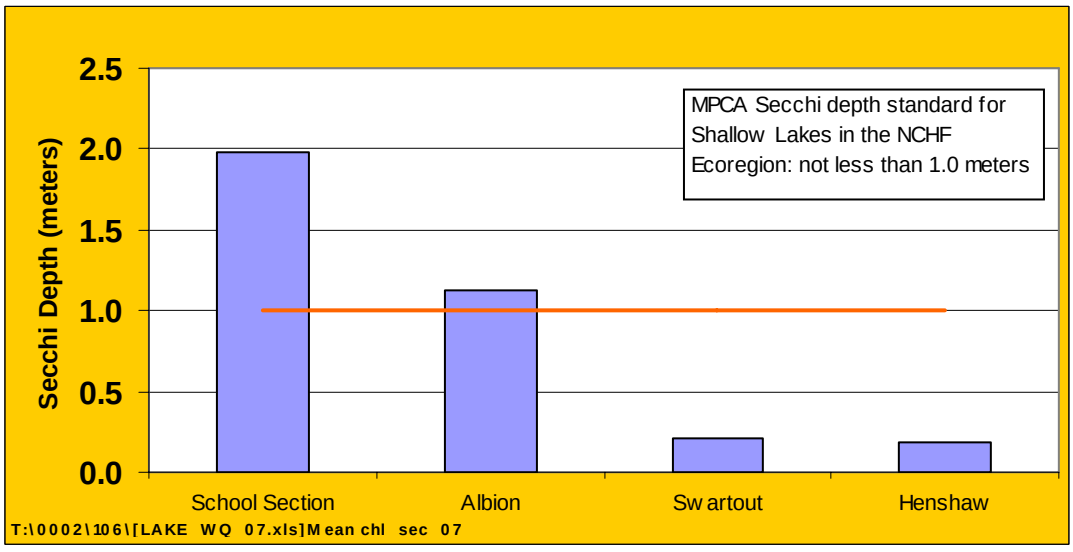


Figure 4.7 Summer Average In-Lake Secchi Depth, Most Recent Monitoring Data (Shallow Lakes)



The Carlson Trophic Status Index (TSI), or level of nutrient enrichment in a lake, was calculated for lakes monitored in 2007 (Table 4.2). Otter Lake is mesotrophic based on the TSI. Additionally, School Section Lake and Clearwater Lake are on the high end of mesotrophy. Union, Pleasant, Augusta, Cedar, Louisa, and Albion are considered eutrophic, and Betsy, Swartout, and Henshaw are all hypereutrophic.

Table 4.2 2007 Trophic Status Index

Lake	Avg TSI	TP TSI	Chla-a TSI	Secchi TSI	TSI Based Classification
Otter	36	47	15	46	Mesotrophic
School Section	49	54	41	50	Mesotrophic
Clearwater East	50	52	48	49	Mesotrophic
Union	52	58	49	48	Eutrophic
Pleasant	53	57	53	49	Eutrophic
Cedar	53	52	54	52	Eutrophic
Augusta	55	54	58	53	Eutrophic
Louisa	66	67	74	59	Eutrophic
Albion	70	79	73	58	Eutrophic
Betsy	75	88	72	65	Hypereutrophic
Swartout	83	84	81	83	Hypereutrophic
Henshaw	87	90	86	85	Hypereutrophic

T:\0002\106\[LAKE_WQ_07.xls]2007 Data

Water quality observed in most lakes monitored during 2007 (Table 4.3) is within ranges seen in recent years. However, phosphorus levels in Lake Betsy, Pleasant Lake, and Lake Louisa showed a slight increase from the most recent year that each lake was monitored. Although the 2007 average phosphorus concentrations were higher than the last time each of these three lakes was monitored, the average phosphorus concentrations were still in the range of average phosphorus concentrations in recent years.

Overall, based on the most recent monitoring data for all lakes within CRWD, water quality is generally good. Table 4.4 compares CRWD lakes to MPCA impairment standards.

Table 4.3 2007 Mean In-Lake Total Phosphorus, Chlorophyll-a, and Secchi Depth, and Historical Ranges

	Total Phosphorus ug/l		Chlorophyll-a ug/l		Secchi Depth (meters)	
LAKE	2007 Mean	Historical Range Mean	2007 Mean	Historical Range Mean	2007 Mean	Historical Range Mean
Albion	186	130-296	79	60-204	1.1	0.5-1.2
Augusta	31	28-300	17	4-73	1.6	1.1-1.9
Betsy	343	120-700	70	4-170	0.7	0.5-2.4
Cedar	29	26-58	11	3-20	1.7	1.1-3.0
Clearwater East	28	23-130	6	3-85	2.2	1.2-3.0
Henshaw	390	150-390	278	53-278	0.2	0.2-0.9
Louisa	79	33-440	79	4-101	1.1	0.6-1.5
Otter	20	13-34	1	1-8	2.6	1.9-3.0
Pleasant	39	15-51	10	4-12	2.2	2.0-3.0
School Section	33	21-50	3	3-14	2.0	1.0-2.2
Swartout	262	200-421	168	144-444	0.2	0.2-1.0
Union	43	31-88	7	7-39	2.3	1.0-2.3

T:\0002\106\[mean in lake_tp_chla_secchi_07.xls]Table

Table 4.4 Lake Trend and Impairment Summary

Lake	Last Monitored	Phosphorus Trend	Use
Albion	2007	Increasing P	Impaired
Augusta	2007	Recent Flat P Trend	Full Use
Bass	2006	Slightly Increasing P	Full Use
Betsy	2007	Flat P Trend	Impaired
Caroline	2007	Recent Flat P Trend	Impaired
Cedar	2006	Increasing P	Full Use
Clear	2006	Increasing P	Impaired
Clearwater East	2007	Decreasing P Trend	Full Use
Clearwater West	2006	Decreasing P Trend	Full Use
Grass	2003	Decreasing P Trend	Full Use
Henshaw	2007	Increasing P	Impaired
Little Mud	2006	Decreasing P Trend	Full Use
Louisa	2007	Recent Flat P Trend	Impaired
Marie	2006	Recent Flat P Trend	Impaired
Nixon	2004	Decreasing P Trend	Full Use
Otter	2007	Flat P Trend	Full Use
Pleasant	2007	Flat P Trend	Full Use
School Section	2007	Flat P Trend	Full Use
Scott	2006	Flat P Trend	Impaired
Swartout	2007	Slightly Increasing P	Impaired
Union	2007	Flat P Trend	Impaired
Wiegand	2005	Decreasing P Trend	Full Use

T:\0002\106\[LAKE_WQ_07.xls]Summary

Historical lake data and trends are in Appendix C. Citizen Secchi depths are in Appendix E. Water quality lab reports are in Appendix F, and field notes are in Appendix G.

4.2 SUPPLEMENTAL MONITORING

In addition to the 2007 regular monitoring program, supplemental monitoring was conducted as part of the Cedar Lake Restoration Project, and at the request of Bass Lake landowners. This monitoring is discussed in the sections below.

4.2.1 Cedar Chain of Lakes Restoration

The Cedar Chain of Lakes Restoration project was started in 2007 in response to a petition by lake shore residents to address the declining water quality and severe algae blooms in Cedar Lake. The primary phosphorus source to Cedar Lake is phosphorus export from the upper watersheds routed through upper watershed lakes. The primary phosphorus source to the upper watershed lakes is internal cycling of phosphorus.

To reduce the phosphorus concentrations in Cedar Lake it is necessary to reduce the nutrient load from the upper watershed, and to reduce the in-lake concentrations in the upper watershed lakes: Lake Albion, Swartout Lake and Henshaw Lake.

Several alternatives were considered, and in 2007 BMPs were implemented to reduce the phosphorus load to Cedar Lake. Part of the restoration project includes on-going monitoring of progress. The restoration efforts, monitoring, and results are discussed below.

4.2.1.1 BMPs Implemented

BMPs implemented in 2007 included installation of rough fish barriers, a wetland treatment basin, buffers, and tile inlet replacements. The locations of these improvement projects are shown on Figure 4.8.

Three fish barriers were installed during early spring 2007 on the Cedar Lake inlet upstream of Highway 55, and at the Swartout Lake and Henshaw Lake outlets to prevent rough fish migration. Photos of these barriers are shown in Figure 4.9.

Effective rough fish population management would likely result in a significant reduction in the internal loading in upstream watershed lakes, and a decrease in nutrient loading to watershed lakes.

Figure 4.8 Cedar Lake Subwatershed Improvement Project Locations

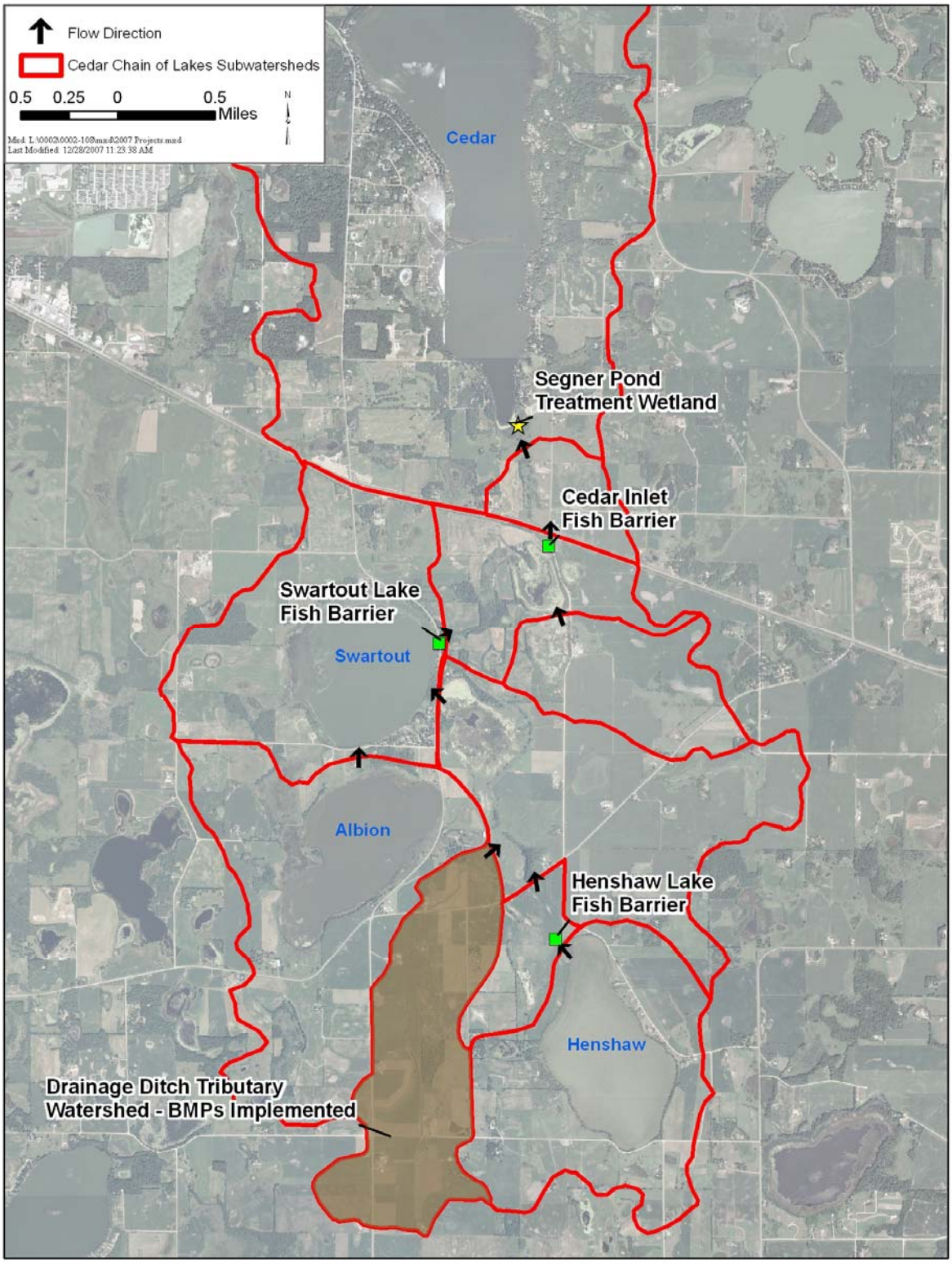


Figure 4.9 Photographs of Fish Barriers

Henshaw Lake Fish Barrier

Swartout Lake Fish Barrier

Cedar Lake Inlet Fish Barrier

Construction began on the Segner Pond treatment wetland on the Cedar Lake inlet just upstream of Cedar Lake in December 2007. When complete, the treatment wetland will consist of a 2.9 acre sedimentation basin with a limestone treatment filter. A stream diversion will route stream flow to the sedimentation basin to remove particulate phosphorus from the inflow to Cedar Lake. The limestone treatment filter will further reduce the phosphorus load to Cedar Lake by removing dissolved phosphorus from the inflow. As the water flows through the limestone filter, the phosphate component in the phosphorus comes in contact with the calcium in the limestone. The phosphate binds to the calcium and is essentially removed from the water. Adding the limestone filter to target the soluble portion of the phosphorus load to Cedar Lake increases the phosphorus removal goal from 50-60%, to about 70-80%.

Watershed best management practices (BMPs) have been implemented in the drainage ditch tributary to Swartout Lake that crosses CR 37 and runs between CR 6 and Iresfeld Ave NW. The BMPs include the buffering of five tile intakes for a three year period, 14 acres of alfalfa buffer for one year, and 132 acres of soybean stubble buffer for one year.

The goal of these measures is to reduce the phosphorus load to the upper watershed lakes and ultimately, Cedar Lake. The measures that are taken on the upper watershed lakes will not only improve the quality of Albion, Henshaw, and Swartout Lakes, but Cedar Lake and lakes farther downstream as well.

4.2.1.2 2007 Monitoring

Cedar Lake, Swartout Lake, Albion Lake, and Henshaw Lake were sampled four times by the CRWD in 2007. Additionally, eight tributary streams were sampled while they were flowing in April-June. The sampling locations are shown on Figure 1-1.

Cedar Lake was also sampled eight times from May to September in 2007 by a lake resident as part of a volunteer lake monitoring program. As shown in Table 4.5, the 2007

average total phosphorus and chlorophyll-a concentrations, and Secchi depth were very similar from both monitoring programs.

Table 4.5 2007 Cedar Lake Monitoring Data

	Date	Total Phosphorus (ug/L)	Chlorophyll-a (ug/L)	Secchi Depth (m)
CRWD Sampling Results	5/25/2007	18		3.5
	6/29/2007	45	11	0.9
	7/27/2007	20	9	0.9
	8/24/2007	31	14	1.5
	2007 Average	29	11	1.7
Volunteer Lake Sampling Results	5/19/2007	26	6	5.2
	6/3/2007	37	21	2.1
	6/17/2007	28	16	1.4
	7/1/2007	34	9	1.1
	7/15/2007	20	4	1.7
	8/19/2007	20	14	1.4
	9/4/2007	19	8	1.4
	9/16/2007	21	8	2.0
	2007 Average	26	11	2.0

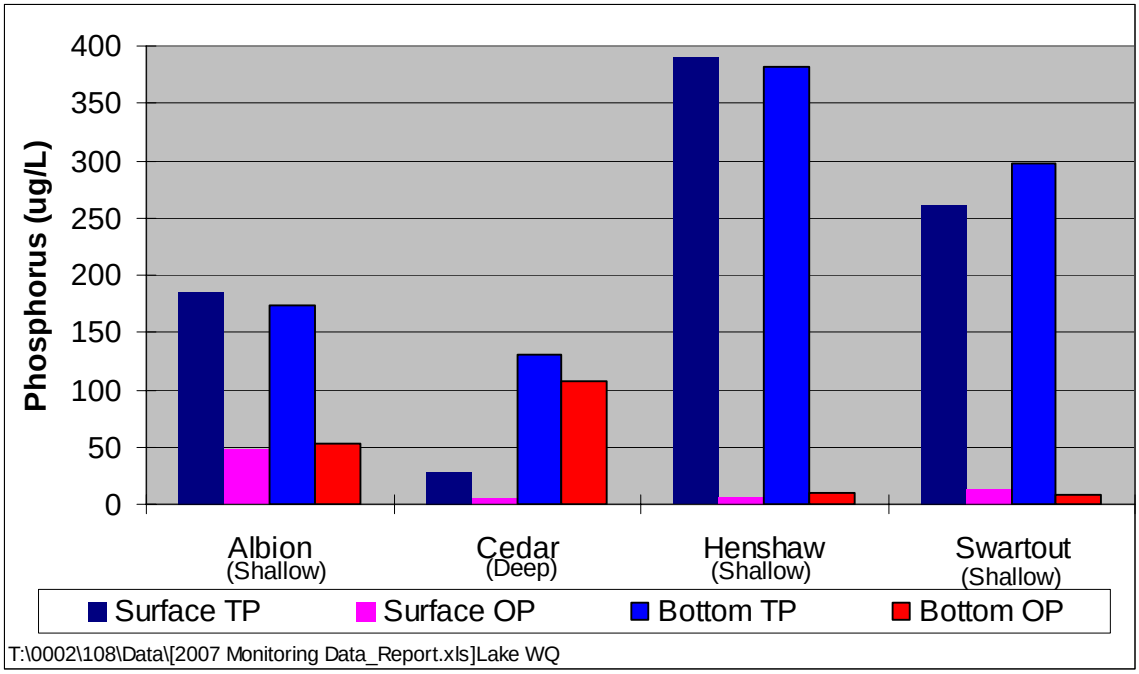
T:\0002\106\Cedar_2007 Comparison\Table

Average surface total phosphorus levels were above the MPCA standard in Albion, Henshaw, and Swartout Lakes as shown in Figures 4.1 and 4.2. The average total phosphorus level in Cedar Lake was below the MPCA standard in 2007.

Average chlorophyll-a concentrations were above the MPCA standard in Albion, Swartout, and Henshaw Lakes as shown in Figures 4.4 and 4.5. Average Secchi depth violated the MPCA standard in Henshaw and Swartout Lakes as demonstrated in Figures 4.6 and 4.7.

Samples were also collected near the bottom of each the four lakes. Figure 4.10 shows that concentrations of both total and soluble reactive phosphorus were very similar at both the surface and near bottom in Albion, Henshaw, and Swartout Lakes. This data, along with temperature profile data collected at each lake, demonstrates that these lakes do not stratify and remain mixed throughout most of the summer. This allows for internal loading of phosphorus from the lake sediments.

Figure 4.10 Phosphorus Concentrations in Cedar Lake Subwatershed Lakes



Eight tributary streams in the Cedar Lake subwatershed were also monitored in 2007. Overall, stream flow was lower than normal in these tributaries due to below normal precipitation during the summer of 2007. The majority of the tributaries were flowing from April to June, and then did not flow again until significant precipitation events occurred in September and October. Total phosphorus concentrations were similar or slightly higher at these monitoring locations than during previous years. However, as a result of the below normal stream flow for most of the summer, total external phosphorus loading to Cedar Lake and the other upper watershed lakes was lower than normal in 2007. The approximate phosphorus loads at each sampling point are shown on Figure 4.11.

The annual total phosphorus loading to each lake was also calculated using a Canfield-Bachman model. A summary of the total phosphorus load to each lake and an estimate of the internal load is shown in Table 4.6. As indicated by the phosphorus loading to each lake, internal loading makes up nearly the entire phosphorus load to Swartout, Albion,

and Henshaw Lakes. This helps to explain the poor water quality of these lakes in a year with below average precipitation and little runoff over the watershed.

Table 4.6-Cedar Lake Subwatershed Lakes Phosphorus Loading

Lake	Watershed Runoff [inches]	Estimated External TP Load [lbs]	Measured External TP Loads [lbs/yr]	Estmated Canfield-Bachmann Annual TP Load [lbs]	Estimated Internal Load as Percentage of Annual Load
Cedar	2	734	998	1300	0%
Swartout	2	406	399	6000	93%
Albion	2	77	--	1600	95%
Henshaw	2	57	--	4000	99%

T:\0002\106\[CB_Analysis_Swartout.xls]Table 4

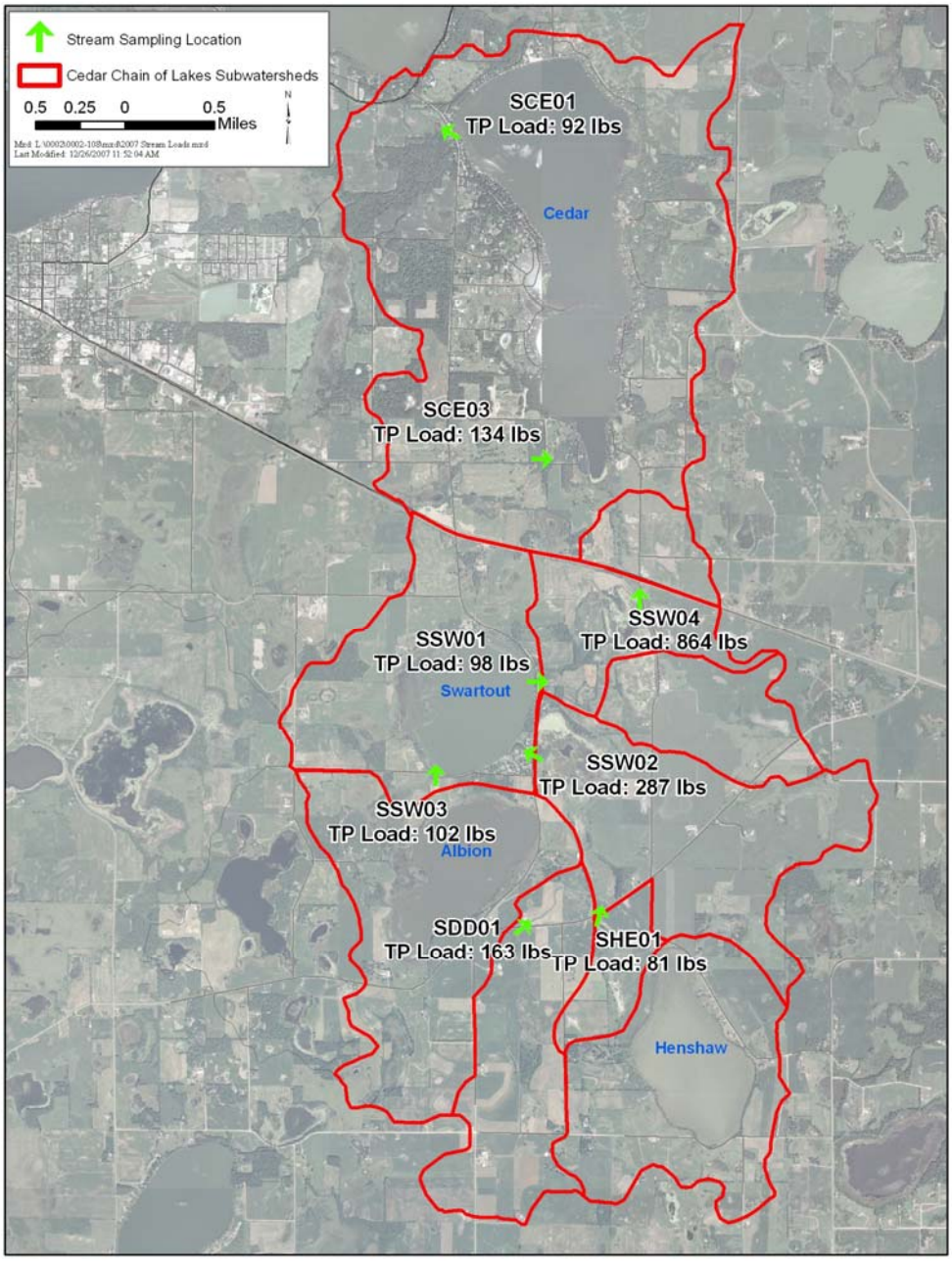
Historical total phosphorus and chlorophyll-a concentrations, along with Secchi depth readings for Cedar, Swartout, Albion and Henshaw Lakes are shown in Appendix C. Overall, total phosphorus concentration trends have been increasing on all four of the lakes that were monitored in the Cedar Lake subwatershed.

Although total phosphorus levels decreased slightly on Swartout and Albion lakes since the lakes were last monitored, phosphorus levels remain well above the MPCA standard. Total phosphorus levels increased on Henshaw Lake in 2007 and were above the water quality standard as well.

In 2007, total phosphorus levels decreased on Cedar Lake in comparison to recent years, and the average phosphorus concentration of 29 ug/L was below the water quality standard for total phosphorus in deep lakes of 40 ug/L. The external load of phosphorus to the lake of approximately 1,000 lbs was also below normal in 2007 likely due mostly to below normal runoff and precipitation. A previous study conducted as part of the Engineers Report for the Cedar, Albion, Swartout, Henshaw Improvement Project indicated that a total phosphorus load to Cedar Lake of 1,000 lbs per year or less was needed to maintain in-lake phosphorus concentrations below the water quality standard. The decrease in average phosphorus concentration that coincided with the reduced load to the lake indicates that the water quality of Cedar Lake will respond favorably to a total

phosphorus load reduction. The goal of the projects implemented in the Cedar Chain of Lakes subwatershed is to maintain an annual external load of phosphorus of 1,000 lbs per year during normal and above normal precipitation years as well.

Figure 4.11 Phosphorus Loading at Tributary Stream Sampling Locations



4.2.2 Bass Lake

In response to concerns about an apparent decline in the water quality in Bass Lake, the CRWD proposed to conduct water quality monitoring after precipitation events at locations around the lake in 2007. Although there are no channelized inflows to Bass Lake, there are several points around the lake where runoff from the lake's direct watershed flows into the lake following significant precipitation events.

Since the flow duration is very short and occurs only during significant precipitation events, the CRWD enlisted a lake resident to collect water quality samples. The volunteer was unable to collect samples during the 2007 monitoring season due to the short duration of flow and lack of concentration of the flow.

5.0 Conclusions

1. Area weighted annual precipitation was 27.20 inches in 2007, 2.39 inches below the mean.

2. Continuous flow measurements recorded at Fairhaven Dam near the center of the watershed show that runoff over the watershed was 6.2 inches, while the calculated runoff at CR 10.5 was 3.0 inches, both below the annual mean of 7.9 inches.

3. The Clearwater River phosphorus load was about 2,057 pounds at CR-10.5. This is low compared with historical averages. The upper watershed load was similar to those measured in the recent past for similar runoff conditions, 1,692 pounds at CR 28.2, well below the established phosphorus-loading goal of 5,000 pounds for Clearwater Lake.

4. The water quality of CRWD lakes is generally good, most lakes are considered full use based on MPCA nutrient criteria. Some lakes experienced an increase in total phosphorus concentrations in 2007, even though precipitation and runoff were lower than normal in 2007. The CRWD will continue to pay special attention to evaluating the water quality in Clear Lake, Lake Betsy, and Bass Lake in upcoming years.

5. Water quality in Cedar Lake was better than it was in 2006, likely due to a decrease in the external load of phosphorus to the lake. Although precipitation and runoff were lower than normal in 2007, the water quality in the upper watershed lakes in this subwatershed continued to decline. The 2007 monitoring results confirm that water quality in Cedar Lake is driven by external phosphorus loads from the upper watershed lakes. The 2007 monitoring results also confirm that water quality in Albion, Swartout, and Henshaw lakes is driven by internal loading of phosphorus.

Appendix A

2007 Water Quality Monitoring Program

DRAFT MEMORANDUM

TO: **Clearwater River Watershed District Board of Managers**

FROM: **Norman C. Wenck**
Engineer for the District

DATE: **February 11, 2007**

RE: **Proposed 2007 Water Quality Monitoring Program**

Introduction

The Clearwater River Watershed District conducts annual water quality monitoring at selected lakes and selected locations on streams. The District's proposed 2007 program is intended to provide data throughout the District. Three TMDL studies, currently underway, will focus on the impaired waters. Phase II of the TMDL study (data collection) will continue in 2007.

The 2007 proposed lake monitoring follows the long-term plan shown in Table 1. The proposed stream monitoring sites together with laboratory and field parameters are shown in Table 2.

Lake Monitoring

The District 2007 regular lake monitoring includes Clearwater Lake East, Lake Augusta, Lake Louisa, Lake Betsy, Pleasant Lake, School Section Lake and Otter Lake. The Clearwater River below Grass Lake will also be monitored under the TMDL Grant. The proposed stations and the parameters to be monitored are shown on Table 2. Citizens also monitor approximately 10 lakes for secchi depth. The Cedar Lake watershed and its upper watershed lakes will be monitored under a special program as part of the Cedar, Albion, Swartout, Henshaw Improvement Project No 06-1.

Stream Monitoring

The Clearwater River will be monitored at station CR28.2. Warner Creek will be monitored at WR 0.2. These stations will be monitored six times for water quality and flow. Parameters are total phosphorus and soluble reactive phosphorus.

Bass Lake

Several (5) run-in points to Bass Lake have been identified and will be sampled and analyzed during three storm events in 2007. No flow occurred for this proposed sampling during 2006.

Estimated Cost

This proposed basic program is estimated to cost $19,700.

Summary

The proposed monitoring program continues the program in place since 1981, coordinates with other programs, and reflects input from the Board and citizens. Please feel free to call me at 763-479-4201 or Rebecca Kluckhohn at 763-479-4224 with any questions or comments that you may have.

TABLE 1
PROPOSED LONG-TERM WATER QUALITY MONITORING PLAN FOR CRWD LAKES

LAKE STATIONS[(1)]	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Clearwater Lake:														
Clearwater East	X	X	X	X	X	X	X	X	DNR		X		X	
Clearwater West	X	X	X	X	X	X	X	X	DNR	X		X		X
Main Stem Lakes:														
Augusta	X		X		X		X		DNR		X		X	
Louisa	X		X		X		X		TMDL/ DNR	TMDL	X		X	
Caroline		X				X		X	DNR	X		X		X
Scott		X	X			X		X		X		X		X
Marie		X		X		X		X	DNR	X		X		X
Betsy	X		X		X		X		X		X		X	
Other Lakes:														
Cedar			X		X		X	X	X	X		X		X
Pleasant	X		X	X				X	MPCA		X			X
School Section	X		X	X				X			X			X
Nixon	X		X		X			X			X			X
Otter	X		X		X			X			X			X
Bass		X	X		X				MPCA/ DNR	X			X	
Clear		X	X	X			X		X			X		
Union		X	X			X			MPCA			X		
Henshaw		X	X			X			X		X			
Little Mud			X			X				X			X	
Wiegand			X			X			X				X	
Swartout			X				X		X	X			X	
Albion			X				X		X	X			X	
Grass			X				X		DNR			X		
Number of Lakes Monitored W/ CRWD Funding	9	9	20	6	9	9	10	10	7	10	9	8	9	9

Note: [(1)]Lake selection based on total lake size ranking scores (Lake Priority Ranking, 1990)

TABLE 2
Proposed 2007 CRWD Monitoring Plan Summary

Category	2007 Schedule	Station	Parameters
Lakes:	May 15 -16	The CRWD will monitor Clearwater (East), Augusta, Louisa, Betsy, Grass, Pleasant, School Section, and Otter	Field: Secchi depth, DO and temperature profiles
	June 19 - 20	Cedar, Albion, Swartout, and Hensaw Lakes will be monitored under Project No. 06-1	Lab: surface samples only for total phosphorus, soluble reactive phosphorus, chlorophyll-a
	Jul 24 - 25 Aug 28 - 29		Citizen Secchi: 10 sites not listed here
Streams:	April 10 May 1	WRO.2	Field: flows, DO and temperature Lab: total phosphorus, soluble reactive phosphorus, total suspended solids
	June 5 July 10 August 2 September 5	CR 28.2 The Clearwater River downstream of Grass Lake will be monitored through the TMDL Study	
	Bi-weekly	River Stage at CR10.5(TMDL)	
Precipitation:	Daily	Watkins and Corrinna	
Special:	3 events	Bass Lake Run in points	Tributaries Field: DO, temperature, conductivity, pH profiles; Lab: total phosphorus, soluble reactive phosphorus Lakes Field: DO, temperature, conductivity, pH profiles; Lab: 3 profile samples for total phosphorus, soluble reactive phosphorus, iron, chlorophyll-a

Appendix B

Historical Mean Flow and Phosphorus Loading

APPENDIX B
Historical Mean Flow and Phosphorus Loading

Clearwater River Watershed District

2007 Annual Report

Station Main Stem:	Year	Average Stream Flow (cu m/sec)	Average Stream Flow (cfs)	Flow-Weighted Average Total Phosphorus Concentration (mg/l)	Total Phosphorus Load (kg)	Total Phosphorus Load (lb)
CR 28.2	1981 (1)	--	--	1.400	--	--
	1981					
(Actual River	1982 (1)	0.93	32.8	0.740	19,700	43,500
Mile 27.2)	1983	2.62	92.6	0.920	76,000	168,000
	1984	1.49	52.6	0.760	35,700	78,800
	1985	2.32	81.9	0.900	65,500	144,000
	1986	3.20	113	0.780	55,200	122,000
	1987	0.11	3.90	0.130	460	1,020
	1988	0.09	3.12	0.660	1,850	4,080
	1989	0.02	0.72	0.190	120	260
	1990	0.51	18.0	0.440	7,040	15,500
	1991	1.11	39.1	0.290	10,200	22,500
	1992	0.26	9.30	0.200	1,660	3,650
	1993	1.28	45.2	0.290	11,600	25,600
	1994	1.17	41.2	0.280	10,100	22,300
	1995	1.15	40.4	0.288	10,400	22,900
	1996	0.33	11.7	0.274	2,860	6,300
	1997	0.27	9.36	0.260	2,170	4,790
	1998	0.41	14.4	0.250	3,190	7,020
	1999	0.08	2.78	0.160	400	870
	2000	0.02	0.72	0.380	240	530
	2001 (4),(5)	0.27	9.46	0.510	4,309	9,500
	2002	0.47	16.50	0.291	4,290	9,460
	2003	0.28	9.92	0.190	1,710	3,770
	2004	0.48	17.04	0.166	1,248	2,751
	2005 (6)	1.11	39.28	0.306	1,862	4,105
	2006	0.31	11.10	0.130	1,328	2,928
	2007	0.14	5.02	0.228	767	1,692
CR 10.5	1981 (1)	1.15	40.6	0.050	2,060	4,550
	1982 (1)	2.20	77.8	0.070	4,990	11,000
	1983	5.64	199	0.100	18,500	40,800
	1984	4.28	151	0.050	6,620	14,600
	1985	3.88	137	0.140	16,700	36,800
	1986	5.52	195	0.150	23,700	52,300
	1987	0.46	16.2	0.040	600	1,320
	1988	0.23	7.95	0.040	260	580
	1989	0.97	34.2	0.080	2,340	5,150
	1990	3.77	133	0.030	3,060	6,750
	1991	6.68	236	0.050	10,500	23,200
	1992	4.16	147	0.060	8,090	17,800
	1993	5.01	177	0.040	6,330	14,000
	1994	2.92	103	0.030	2,850	6,290
	1995	2.83	100	0.034	3,040	6,710
	1996	1.53	54.2	0.041	1,970	4,350
	1997	2.06	72.8	0.040	2,690	5,940
	1998	1.78	63.0	0.040	2,330	5,120
	1999	1.25	44.1	0.040	1,520	3,350
	2000	0.31	10.8	0.030	280	610
	2001 (4),(5)	0.90	31.7	0.030	850	1,873
	2002	2.46	87.0	0.035	2,950	6,500
	2003	2.11	74.6	0.024	1,590	3,500
	2004	1.66	58.8	0.022	639	1,409
	2005 (6)	3.05	107.6	0.023	59	130
	2006 (6)	1.76	62.2	0.032	1,263	2,785
	2007	0.97	34.1	0.031	933	2,057

APPENDIX B
Historical Mean Flow and Phosphorus Loading

Clearwater River Watershed District

2007 Annual Report

Station Main Stem:	Year	Average Stream Flow (cu m/sec)	Average Stream Flow (cfs)	Flow-Weighted Average Total Phosphorus Concentration (mg/l)	Total Phosphorus Load (kg)	Total Phosphorus Load (lb)
Tributaries:						
WR 0.2 (2)	1981 (1)	0.07	2.60	0.170	390	860
	1982 (1)	0.23	8.20	0.160	780	1,720
	1983	0.47	16.50	0.090	1,270	2,800
	1984	0.60	21.20	0.050	950	2,100
	1985	0.48	17.10	0.140	2,130	4,700
	1986	0.86	30.40	0.200	4,630	10,200
	1987	0.04	1.50	0.070	100	230
	1988	0.01	0.40	0.170	60	130
	1989	0.03	1.19	0.140	80	180
	1990	0.06	2.28	0.370	750	1,660
	1991	0.26	9.22	0.111	860	1,900
	1992	0.11	4.02	0.050	170	370
	1993	0.24	8.59	0.100	760	1,670
	1994	0.18	6.34	0.060	320	700
	1995	0.12	4.27	0.054	210	460
	1996	0.05	1.78	0.110	180	380
	1997	0.09	3.15	0.077	220	480
	1998	0.09	3.11	0.110	290	650
	1999	0.06	2.03	0.070	130	280
	2000 (3)	0.01	0.44	0.060	25	56
	2001 (4),(5)	0.08	2.88	0.100	257	567
	2002	0.26	9.17	0.114	930	2,060
	2003	0.16	5.79	0.062	320	710
	2004	0.07	2.6	0.063	78	172
	2005	0.58	20.6	0.066	22	48
	2006	0.06	2.1	0.090	102	224
	2007		0.9	0.064	34	76

NOTES:

Flow values are time-weighted averages unless otherwise noted.
Total phosphorus values are flow- and time-weighted averages unless otherwise noted.

(1) Values in 1981 and 1982 are arithmetic means
(2) Station WR 0.2 was designated Station WC 0.2 in 1981-1983
(3) Phosphorus values in 2000 are flow-weighted and adjusted per log-log regression on flow so as to correspond to annual mean flows.
(4) 2001 Flow and total phosphorus values are arithmetic averages.
(5) 2001 total phosphorus loads estimated from arithmetic averages of flow and total phosphorus values.
(6) Values in 2005 and 2006 were calculated using supplemental flow data from CSAH 40 near Clearwa

T:\0002\106\[Stream_Loads_Historic_07.xls]Table 2

Appendix C

Lake Historical Data

Appendix C

Summary of Historical Lake Water Quality Data
Summer (June-September) Epilimnetic Means

Clearwater River Watershed District

2007 Annual Report

	Number of Samples	Total Phosphorous (ug/l) Mean (3)		Std. Dev.		Chlorophyll-a (ug/l) Mean		Std. Dev.		Secchi Disk Transparency (m) Mean	Std. Dev.
ALBION											
1996	4	130		24		204		224		0.5	0.3
1999	4(5)	220		65		169		72		0.8	0.0
2003	4	199		78		117		73		1.0	
2005	4	248		182		60		44		0.8	
2006	3	296		82.28		203		82		1.2	
2007	4	186		83		79		107		1.1	
Mean		213		86		139		100		0.9	0.1
AUGUSTA											
1981	7	260		400		25		14		1.4	0.3
1982	7	140		120		34		21		1.4	0.6
1983	7	300		90		4		3		1.8	1.0
1984	7	90		30		4		2		1.6	0.8
1985	7	120		120		23		12		1.2	0.2
1986	6	90		40		69		91		1.9	0.5
1987	7	30		10		20		12		1.3	0.3
1988	5	40		10		19		6		1.4	0.3
1989	6	80		30		26		40		1.5	0.4
1990	5	90		20		73		105		1.7	0.7
1991	3	80		40		56		73		1.1	0.4
1992	8	30		20		19		6		1.6	0.7
1993	4 (1)	68		20		42		19		1.2	0.4
1995	4 (2)	28	(4)	15		21		12		1.8	0.7
1997	4	46	(4)	13		20	(5)	1		1.7	0.2
1999	4(6)	37		4		9		2.7		1.6	0.2
2001	2	48		6		6		0.0		1.8	0.0
2002	SWCD	84.3				14				1.9	
2003	3	42		15		29		23		1.5	
2007	4	31		13		17		7		1.6	
Mean		87		53		27		25		1.6	0.4
BASS											
1994	4	13	(4)	14		5		0.8		3.2	0.4
1998	4	28		11		2		1.0		3.1	0.6
1999	3	22		5		3		1.4		3.1	0.7
2001	2	25		4		3		1.0		4.2	1.8
2005	9	17		4		4		1.5			
Mean		21		8		3		1		3.4	1
BETSY											
1981	7	700		190		8		5.6		2.4	1.1
1982	7	650		90		59		50		1.3	0.7
1983	7	560		270		5		4		1.1	1.3
1984	7	350		160		7		5		0.8	0.2
1985	7	280		230		30		26		1.1	0.6
1987	2	120		0		74		35		0.9	0.41
1995	4 (2)	290		183		18		13		1.0	0.34
1997	4	245		108		100	(5)	98		0.8	0.05
1999	3(8)	247		110		170		85		0.8	0.2
2001	2	420		368		4		1		0.5	0.0
2003	4	194		78		45		52.0		1.3	
2005	4	140		58		20		11.4		1.1	
2007	4	343		174		70		95.0		0.7	
Mean		349		155		45		32		1.1	0.5

Appendix C

Summary of Historical Lake Water Quality Data
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		Number of Samples	Total Phosphorous (ug/l) Mean (3)	Total Phosphorous (ug/l) Std. Dev.	Chlorophyll-a (ug/l) Mean	Chlorophyll-a (ug/l) Std. Dev.	Secchi Disk Transparency (m) Mean	Secchi Disk Transparency (m) Std. Dev.
CAROLINE								
1981		7	220	100	39	33	1.3	0.3
1982		7	260	140	54	35	1.4	0.8
1983		7	300	140	3	3	1.8	1.1
1984		7	140	50	5	2	1.3	0.3
1985		7	170	150	41	46	1.5	0.6
1987		2	50	10	46	30	1.1	0.4
1994		4	40	18	55	16	0.8	0.2
1996		4	88	33	36	12	1.2	0.2
1998		4	86	24	55	43	1.2	0.1
2001	(SCWD)	5	43	18	12	10	1.8	0.8
2002			95		45		1.6	
2003	(SCWD)	5	66		29		1.5	
2004		4	45	8	25	18	1.1	0.0
2006		4	47	20	37	36	1.9	
Mean			118	59	34	24	1.4	0
CEDAR								
1993		4	30	10	13	5.9	3.0	0.4
1996		4	33	8	13	6.5	2.4	0.3
1999		4	31	8	10	4.4	1.1	0.2
2001		2	26	5	6	1.0	1.8	1.4
2003		4	52	41	11	6	1.9	
2004		4	33	15	3	3	2.6	1 reading
2005		5	37	11	9	4	2.9	
2006		4	58	40	20	18.8	2.6	
2007		4	29	12	11	68.0	1.7	
Mean			37	17	11	13	2.2	0.6
CLEAR								
1994		4	80	24	17	8	1.2	0.3
1998		4	220	141	110	141	1.0	0.1
1999		4	188	43	85	47	0.5	0.0
2000		4	228	30	134	42.6	0.3	0.1
2003		4	200	52	72	23	0.7	
2005		4	307	107	60	82	1.1	
2006		4	143	19	60	20	0.9	
Mean			195	59	77	52	0.8	0.1

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	Number of Samples	Total Phosphorous (ug/l) Mean (3)	Std. Dev.	Chlorophyll-a (ug/l) Mean	Std. Dev.	Secchi Disk Transparency (m) Mean	Std. Dev.
CLEARWATER EAST							
1981	7	60	20	11	8	2.6	0.7
1982	7	60	30	12	9	2.7	1.6
1983	7	90	50	3	2	2.4	1.8
1984	7	90	40	4	2	1.4	0.2
1985	7	130	60	39	28	1.2	0.3
1986	6	80	40	85	132	2.1	0.8
1987	7	30	10	18	20	2.6	1.2
1988	5	40	10	10	5	2.9	1.8
1989	6	60	20	5	4	3.0	1.9
1990	5	90	100	18	9	2.0	0.6
1991	3	50	20	10	7	1.4	0.2
1992	8	30	10	20	10	2.0	0.6
1993	4 (1)	43	15	42	38	1.5	0.8
1994	4	23	5	14	9	1.4	0.2
1995	4 (2)	30	8	16	10	1.6	0.4
1996	4	33	8	10	3	2.1	0.3
1997	4	52	17	8 (5)	2	1.6	0.2
1998	4 (6)	36	18	11	3	1.9	0.4
1999	4	54	6	10	2.1	1.8	0.2
2000	4	33	18	10	3.4	2.3	1.0
2001	2	40	25	7	0.0	2.4	0.7
2002		36		14		1.8	
2003	3	22	5	7	6	2.4	
2004	4	29	13	6	3	2.6	0
2007	4	28	11	6	5	2.2	
Mean		50.8	23.3	16	13.3	2.1	0.7

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Summer (June-September) Epilimnetic Means

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	Number of Samples	Total Phosphorous (ug/l) Mean (3)	Std. Dev.	Chlorophyll-a (ug/l) Mean	Std. Dev.	Secchi Disk Transparency (m) Mean	Std. Dev.
CLEARWATER WEST							
1981	7	60	20	45	71	2.6	0.9
1982	7	100	60	29	25	1.7	0.7
1983	7	160	100	4	5	1.8	1.4
1984	7	70	30	4	2	1.4	0.2
1985	7	110	80	24	17	1.9	1.3
1986	6	50	20	77	137	2.6	1.0
1987	7	40	10	20	12	2.0	0.4
1988	5	40	10	17	10	2.6	1.2
1989	6	70	10	8	4	2.3	0.9
1990	5	50	20	31	15	1.9	0.8
1991	3	60	40	18	12	1.5	0.0
1992	8	60	70	29	24	1.9	0.6
1993	4 (1)	40	0	29	6	1.4	0.3
1994	4	33	15	17	8	1.5	0.2
1995	4 (2)	35	11	21	10	1.4	0.3
1996	4	43	11	9	2	2.0	0.3
1997	4	44	3	13	6	1.5	0.1
1998	4 (7)	34	11	14	3	1.5	0.1
1999	4(6)	31	4	10	2.0	1.6	0.3
2000	4	41	31	9	2.9	1.9	0.4
2001	2	42	11	8	1.0	1.4	0.0
2002		42		18		1.9	
2003	3	27	9	14	9	2.2	
2004	4	26	8	7	4	1.7	0.0
2006	4	40	12.84	11	24.6	1.9	
Mean		54	25	19	17	1.8	1
GRASS							
1996	4	38	26	12	5	1.9	0.5
1998	1	30	0				
1999	4	25	2	14	9.3	1.9	0.4
2003	2	24	2	1	1	2.9	
2005	17					3.2	0.986
Mean		29	8	9	5	2.5	0.6
HENSHAW							
1995	4	270	58	238	67	0.4	0.1
1998	4 (5)	150	48	53	22	0.9	0.2
1999	4	295	156	136	166	0.9	0.1
2002		210		103		0.7	
2005	5	281	177	144	137.9	0.5	
2007	4	390	134	278	127.0	0.2	
Mean		241	110	135	98	0.7	0.1
LITTLE MUD							
1995	4	55	50	36	38	1.6	0.5
1999	3	62	42	5	4	2.1	0.1
2002		49		21		1.4	
2006	4	39	4	5	2	2.8	
Mean		51	32	17	14	2.0	0.3

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Clearwater River Watershed District

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		Number of Samples	Total Phosphorous (ug/l) Mean (3)	Std. Dev.	Chlorophyll-a (ug/l) Mean	Std. Dev.	Secchi Disk Transparency (m) Mean	Std. Dev.
LOUISA								
1981		7	440	110	39	29	1.4	0.4
1982		7	420	140	68	26	1.5	0.5
1983		7	410	170	4	4	1.4	1.4
1984		7	220	80	8	6	1.0	0.1
1985		7	160	100	26	17	1.1	0.3
1986		6	190	50	96	86	1.1	0.1
1987		7	100	10	70	44	0.8	0.2
1988		5	140	60	101	39	0.6	0.3
1989		6	110	40	69	78	0.8	0.5
1990		5	200	80	55	35	1.3	0.5
1991		3	160	70	31	18	1.5	0.3
1992		8	140	140	46	22	1.1	0.3
1993		4 (1)	170	40	35	13	1.2	0.2
1995		4 (2)	100	36	75	27	0.8	0.2
1997		4	68	7	59 (5)	8	0.9	0.2
1999		4	73	29	38	20	1.0	0.1
2001		2	33	30	5	4	0.9	
2003		3	100	13	68	28	1.1	
2006	Site 1	7	54	21	41	24	1.0	
2006	Site 2	7	57	20	43	25	1.0	
2007		4	79	44	79	52	1.1	
Mean			173	65	49	28	1.1	0.3
MARIE								
1981		7	270	130	31	19	1.3	0.5
1982		7	360	120	63	57	1.3	0.6
1983		7	340	160	4	4	0.9	0.3
1984		7	190	60	7	5	0.9	0.3
1985		7	230	210	34	14	1.0	0.2
1986		6	160	30	92	91	1.1	0.1
1987		7	120	30	95	30	0.6	0.1
1988		5	220	80	153	91	0.4	0.1
1989		6	120	40	58	54	0.6	0.4
1990		5	150	60	101	33	0.8	0.2
1994		4	90	99	71	19	0.6	0.1
1996		4	100	39	37	5	0.8	0.1
1998		4	76	15	56	12	1.1	0.1
2000		4	74	18	13	7.7	2.3	1.0
2002			70		37		1.2	
2003		3	87	50	81	67	1.3	
2004		4	84	45	34	16	1.1	0.0
2006		4	78	30.16	75	65	1.6	
Mean			157	72	58	35	1.1	0.3
NIXON								
1994		4	25 (4)	25	5 (4)	3.4	1.8	0.7
1997		4	30	8	5 (5)	1.5	2.8	0.2
1999		4	39	17	7	8.7	3.3	0.5
2001		2	21	1	6	3.0	3.2 (8)	
2004		4	15	4	2	1	3.0	0.1
Mean			26	11	5	3	2.8	0

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Clearwater River Watershed District

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	Number of Samples	Total Phosphorous (ug/l) Mean (3)		Std. Dev.	Chlorophyll-a (ug/l) Mean		Std. Dev.	Secchi Disk Transparency (m) Mean	Std. Dev.
OTTER									
1994	4	13	(4)	4	8		1.8	1.9	0.3
1997	4	23		10	4	(5)	1.5	2.1	0.3
1999	4	34		5	7		4.8	3.0	0.4
2001	2	30		22	4		1.0	2.8	0.4
2004	4	16		10	3		2	2.2	0.0
2007	4	20		10	1		1	2.6	
Mean		23		10	4		2	2.4	0
PLEASANT									
1993	4	15	(4)	9	12		8	2.0	0.6
1997	4	51		31	9	(5)	2	2.4	0.6
1999	4(6)	25		5	9		5.8	3.0	0.9
2004	4	20		9	4		1	2.3	0.0
2005	9	29		11	12		10	3.0	1.0
2007	4	39		6	10		6	2.2	
Mean		29.9		11.8	9		5.5	2.5	0.6
SCHOOL SECTION									
1993	4	35	(4)	38	14		9	2.2	0.8
1997	4	29		9	11	(5)	5	1.6	0.4
1999	4(5)	50		12	13		10	1.0	0.5
2004	4	21		9	3		2	2.0	0.0
2007	4	33		11	3		4	2.0	
Mean		34		17	10		6	1.7	0
SCOTT									
1981	7	660		340	26		27	1.9	0.9
1982	6	540		220	57		39	1.4	0.7
1983	7	450		170	3		3	1.2	1.4
1984	7	270		100	6		5	0.7	0.1
1985	7	260		280	35		29	1.1	0.5
1994	4	160		117	94		71	0.7	0.1
1996	4	280		174	223		68	0.5	0.1
1998	4 (5)	230		176	141		77	0.8	0.1
1999	3	223		163	76		30	0.6	0.1
2002		210			103			0.7	
2003	4	158		52	66		33	0.8	
2004	4	103		20	51		4	0.8	0.0
2006	3	120		392	61		17	0.8	
Mean		282		184	72		34	0.9	0.4
SWARTOUT									
1996	4	370		181	173		164	1.0	0.7
1999	4(6)	200		75	151		91	0.7	0.2
2003	4	421		293	444		524	0.9	
2005	4	278		41.8	144		53	0.5	
2006	3	372		125	207		89.2	0.9	
2007	4	262		72	168		124.0	0.2	
Mean		317		131	214		184	0.7	0.5

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Summary of Historical Lake Water Quality Data
Summer (June-September) Epilimnetic Means

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2007 Annual Report

	Number of Samples	Total Phosphorous (ug/l) Mean (3)	Total Phosphorous (ug/l) Std. Dev.	Chlorophyll-a (ug/l) Mean	Chlorophyll-a (ug/l) Std. Dev.	Secchi Disk Transparency (m) Mean	Secchi Disk Transparency (m) Std. Dev.
UNION							
1995	4	43	15	15	1	1.4	0.3
1998	4 (5)	50	27	16	9	1.7	0.4
1999	3	31	15	12	10	1.8	0.9
2002		88		39		1.0	
2005	7	58	13	22	17.0	1.9	0.7
2007	4	43	21	7	3.0	2.3	
Mean		54	18	21	9	1.6	1
WIEGAND							
1995	4	35	5	12	2	1.7	0.2
1999	4(5)	61	44	6	1.1	2.4	0.6
2002		37		5		3.0	
2005	4	31	4	3	1.9	3.4	
Mean		41	18	7	2	2.6	0.4

Notes:
(1) The fourth sample was collected on October 6, 1993.
(2) The fourth sample was collected on October 2 or 3, 1995
(3) Starting in 1993, Total phosphorus means are rounded to two significant figures. Prior to 1993, the mean values were rounded to the nearest 10 ug/l.
(4) Values reported as "Less than" the detection limit were estimated as half of the detection limit.
(5) Three samples were analyzed for chlorophyll-a.
(6) Three samples were analyzed for total phosphorus.
(7) Three secchi disk readings were recorded.
(8) One secchi disk reading was recorded.
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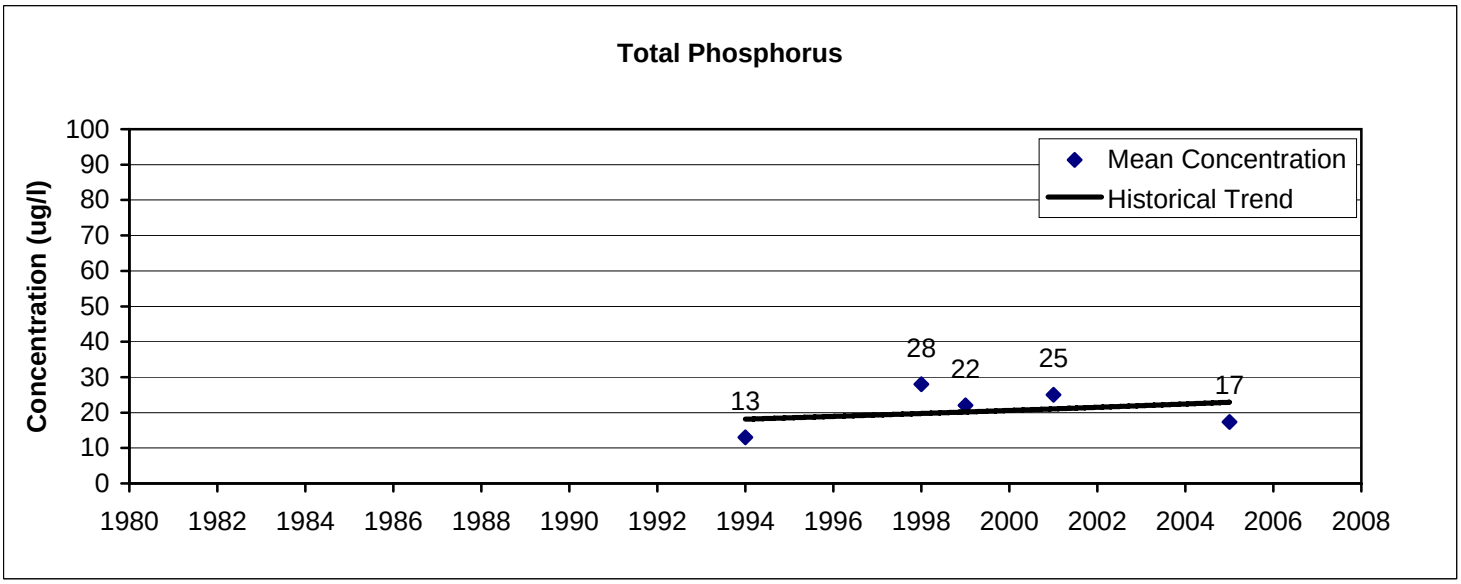

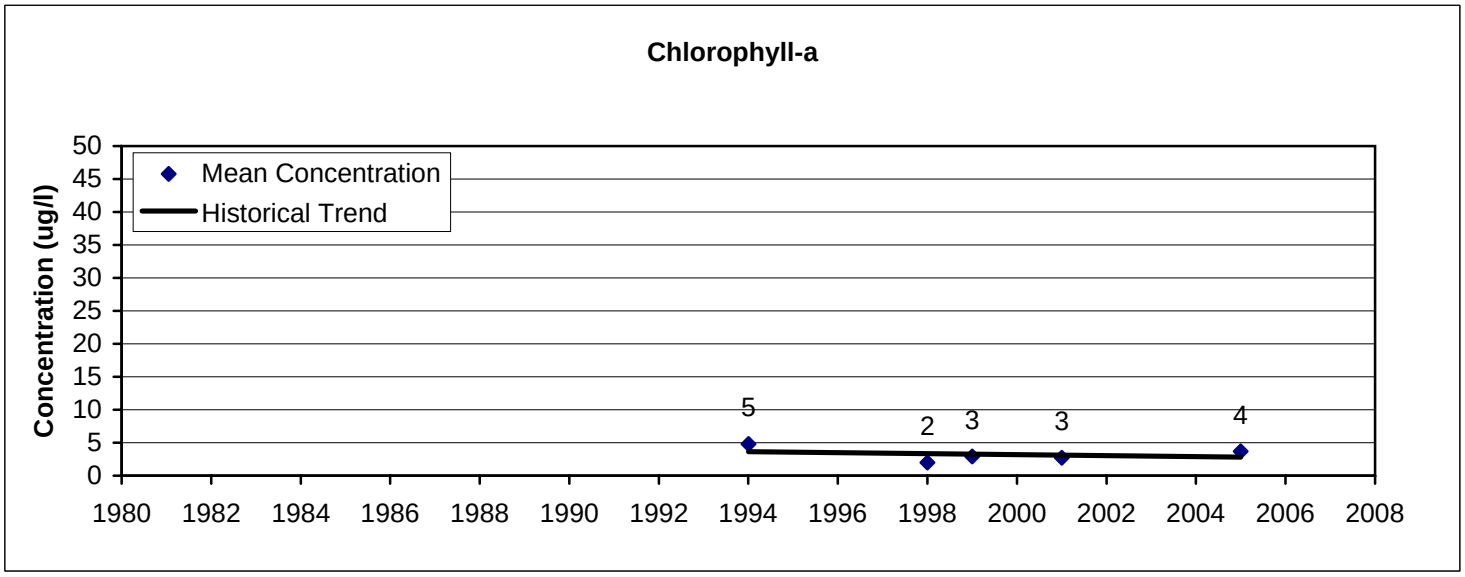

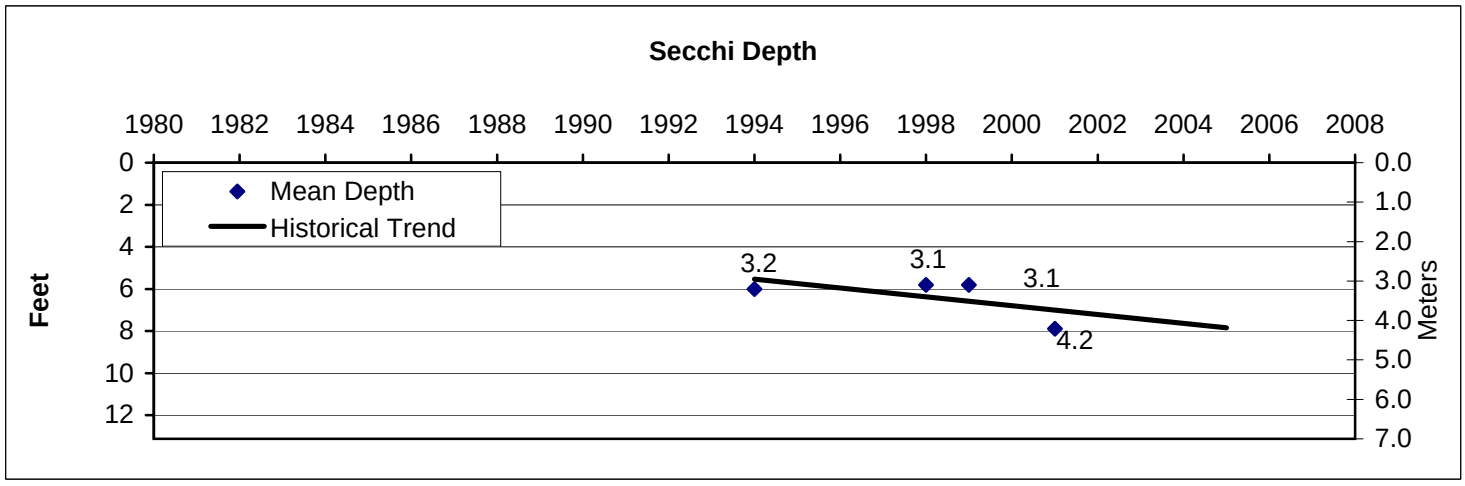

Clearwater River Watershed District	Wenck Associates, Inc. 1800 Pioneer Creek Center Environmental Engineers Maple Plain, MN 55359	Jan 2008
Bass Lake Historical Data		Appendix C

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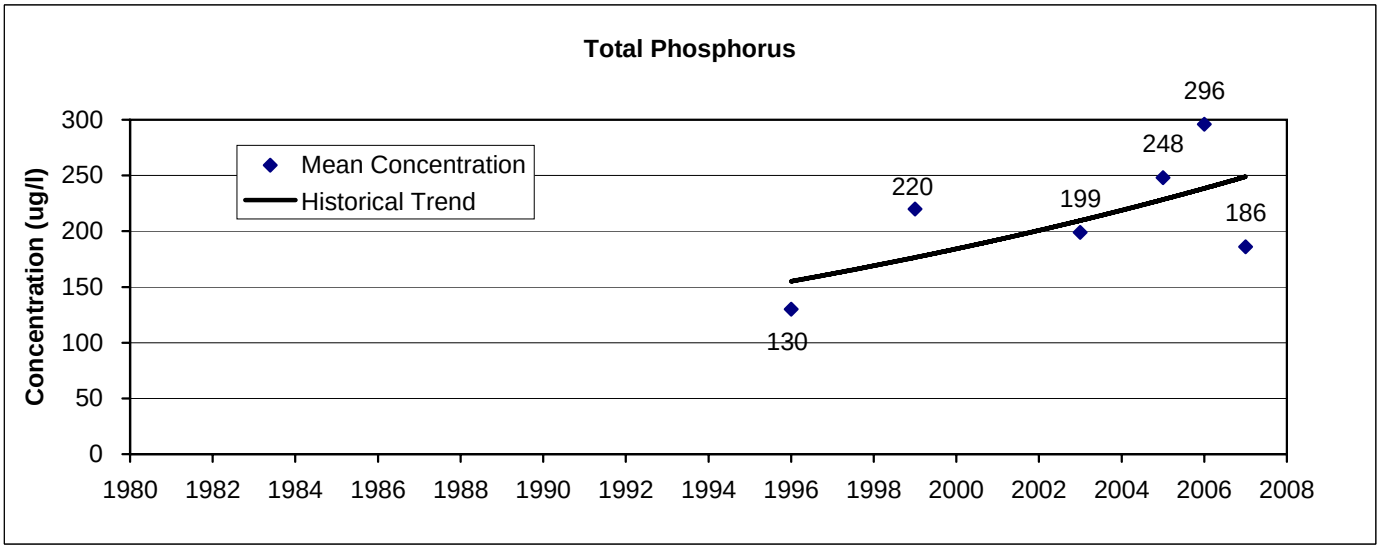

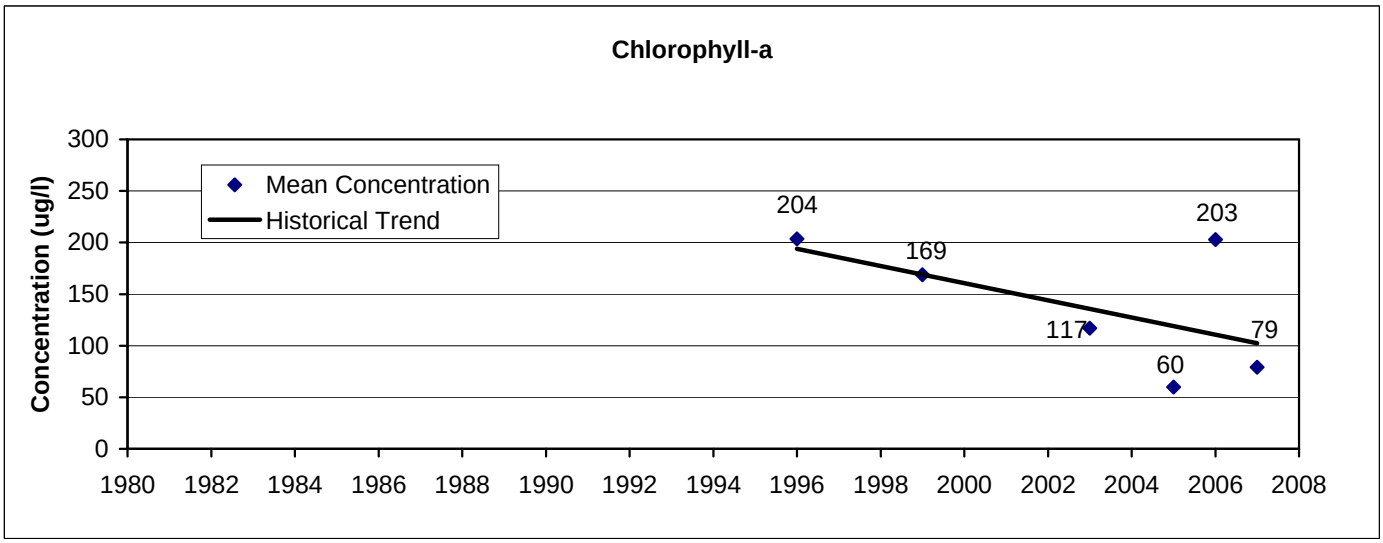

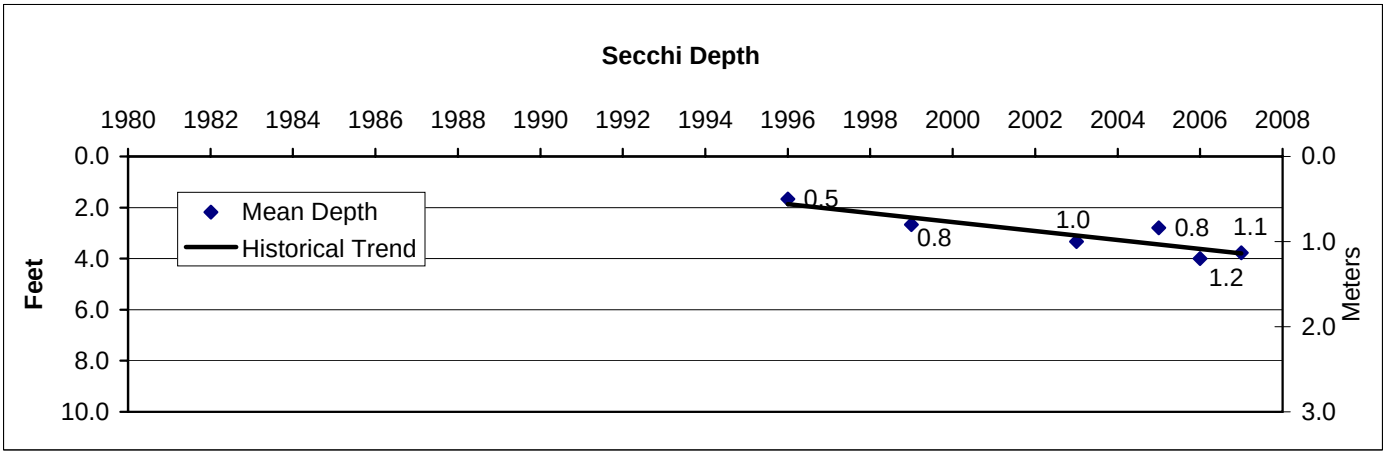

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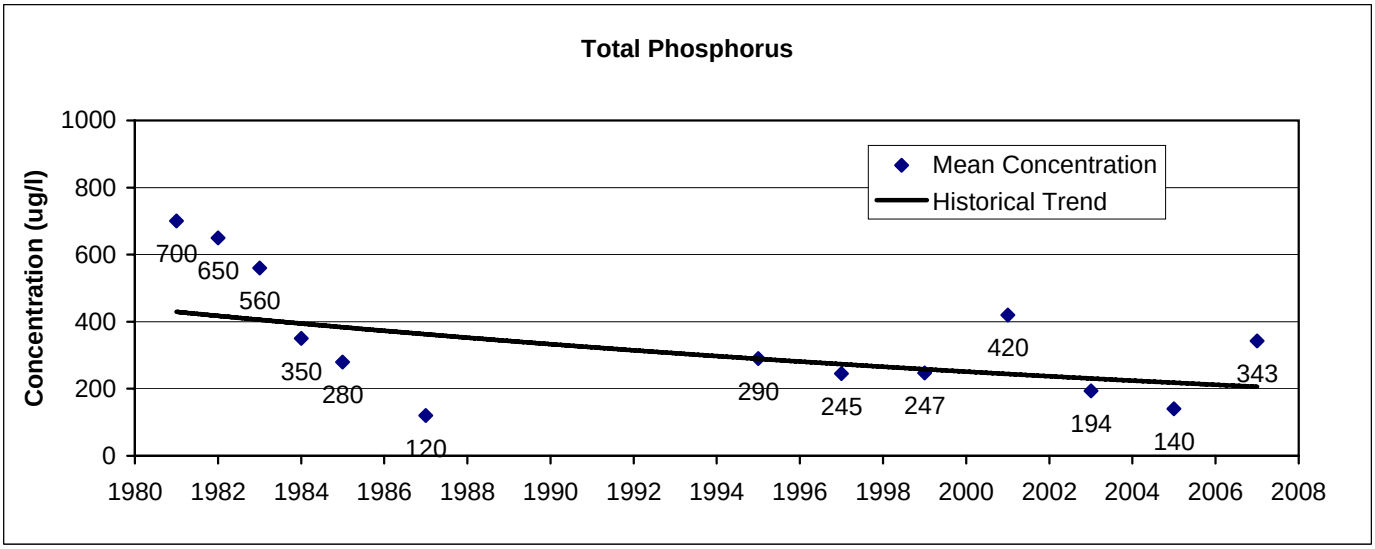
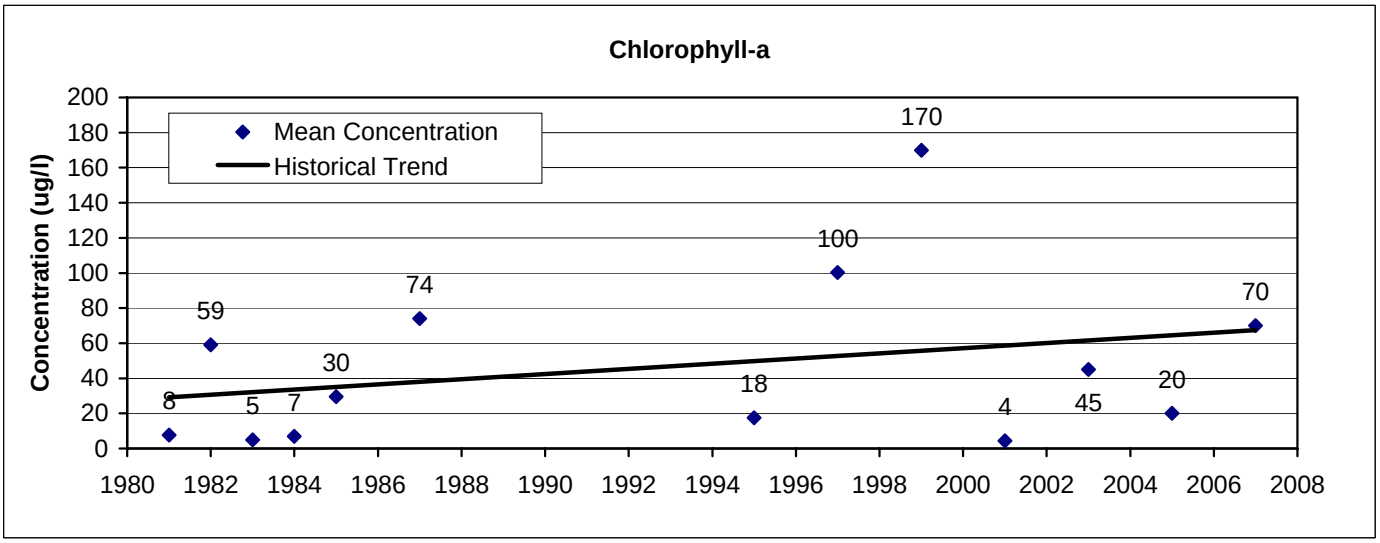
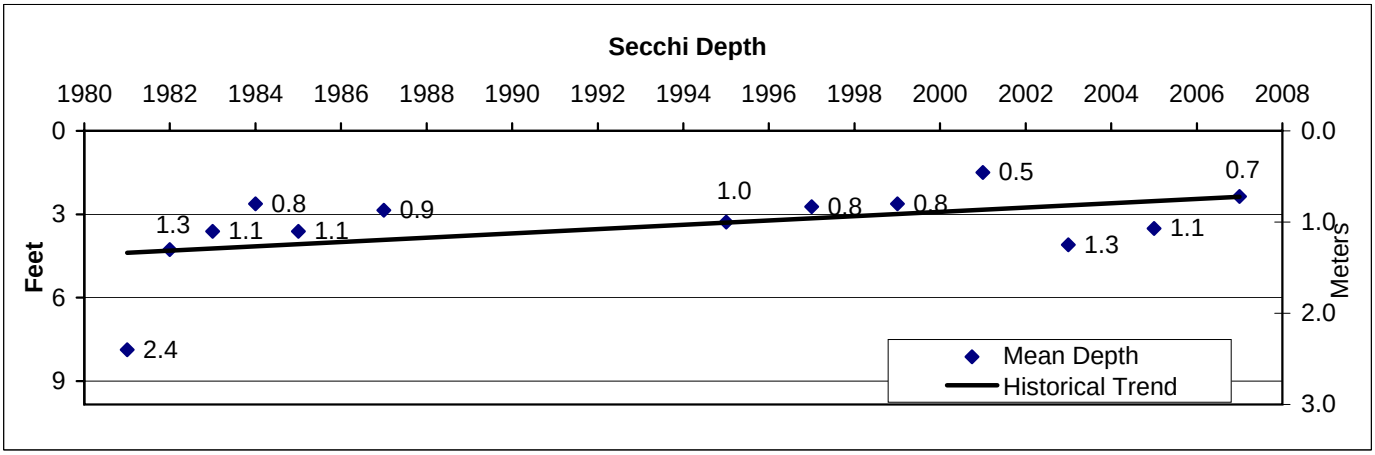
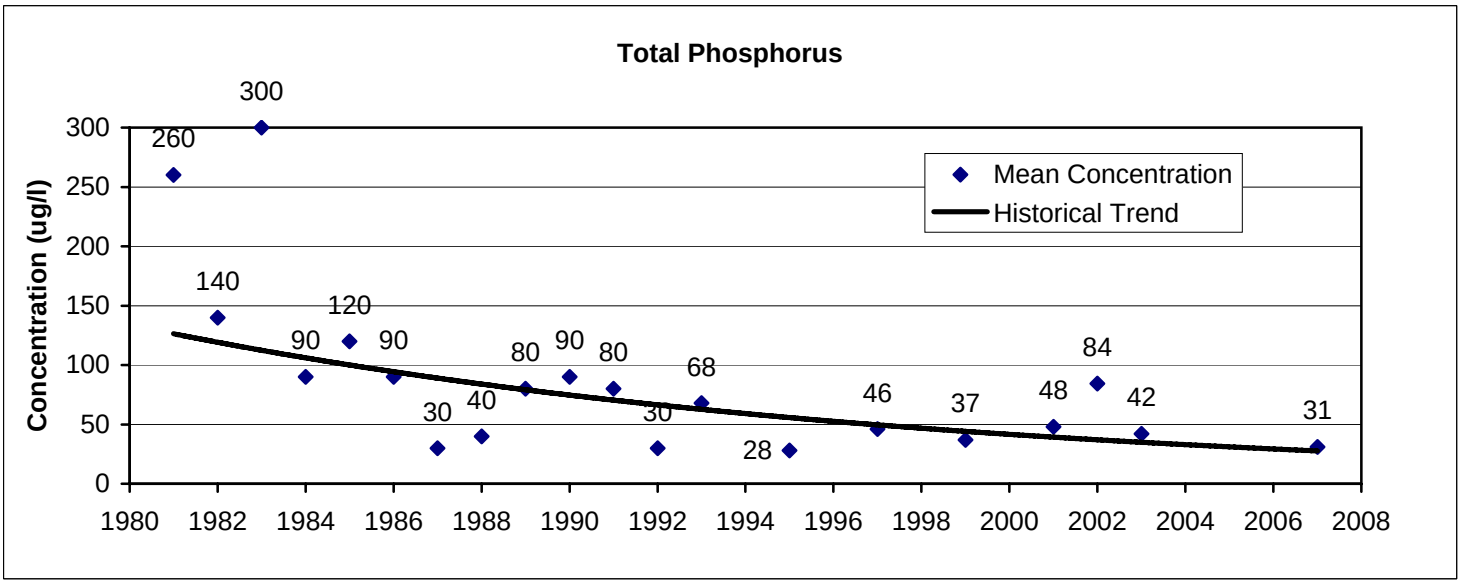






Clearwater River Watershed District	Wenck Associates, Inc. 1800 Pioneer Creek Center Environmental Engineers Maple Plain, MN 55359	Jan 2008
Lake Betsy Historical Data		Appendix C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Concentration (ug/l)
Mean Concentration
Historical Trend
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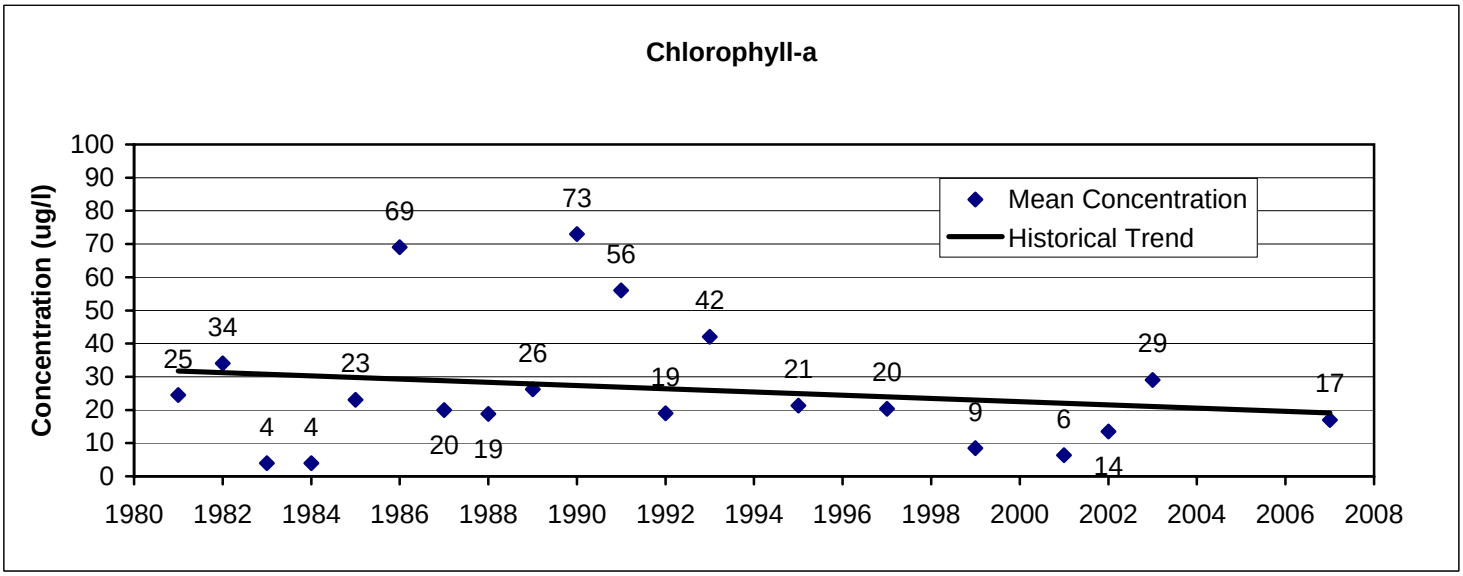
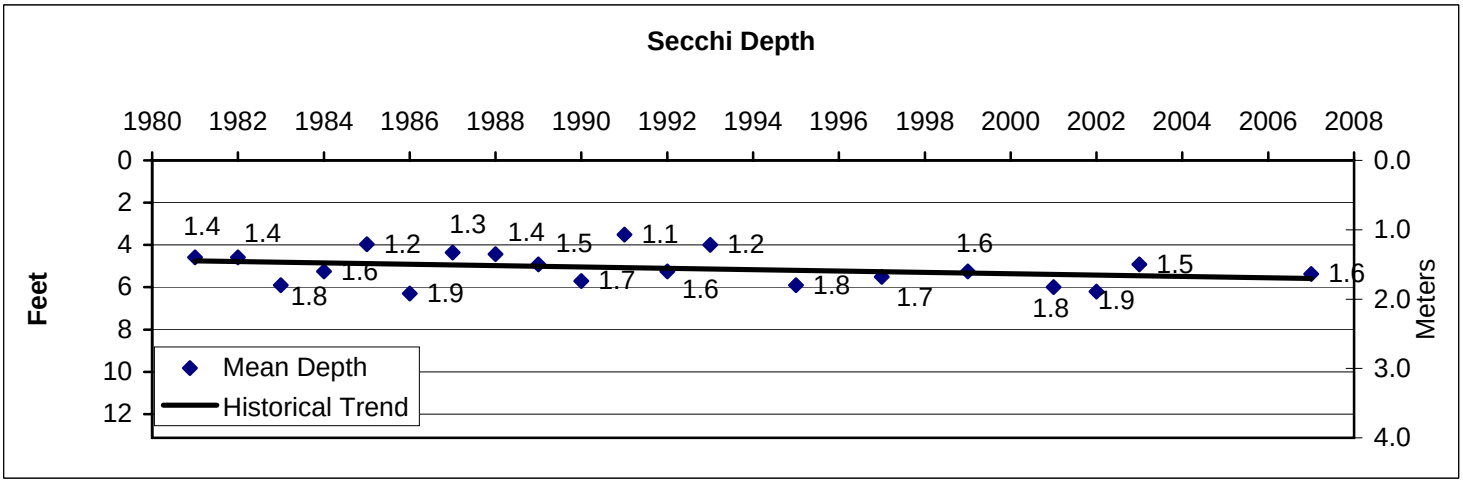
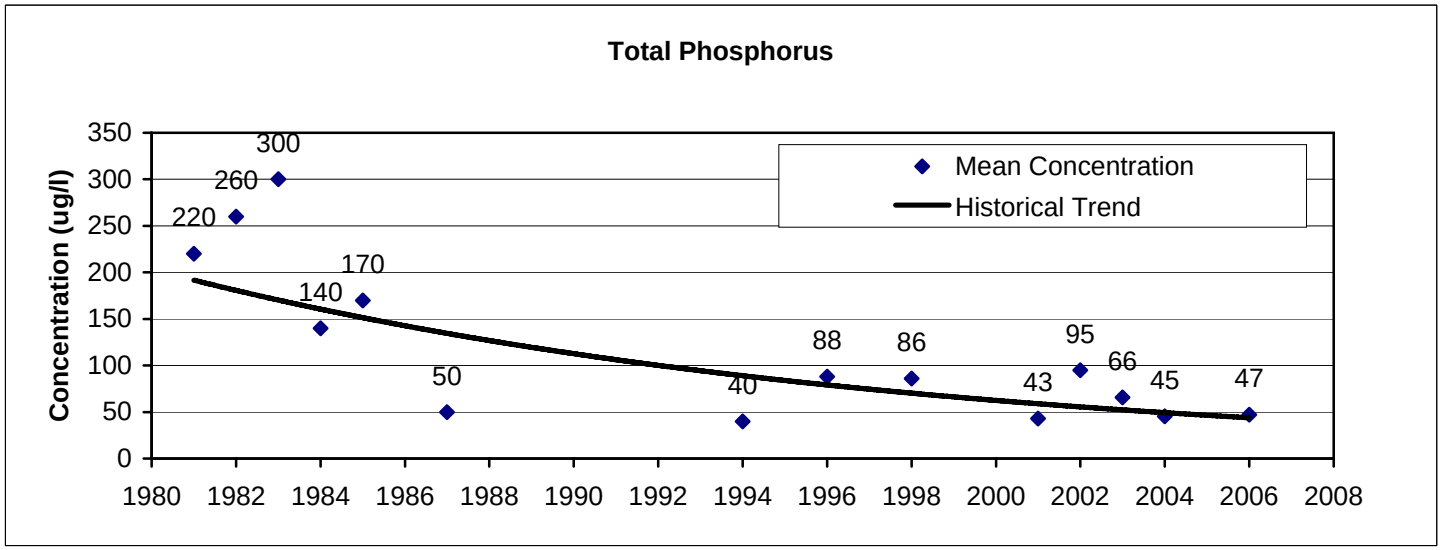
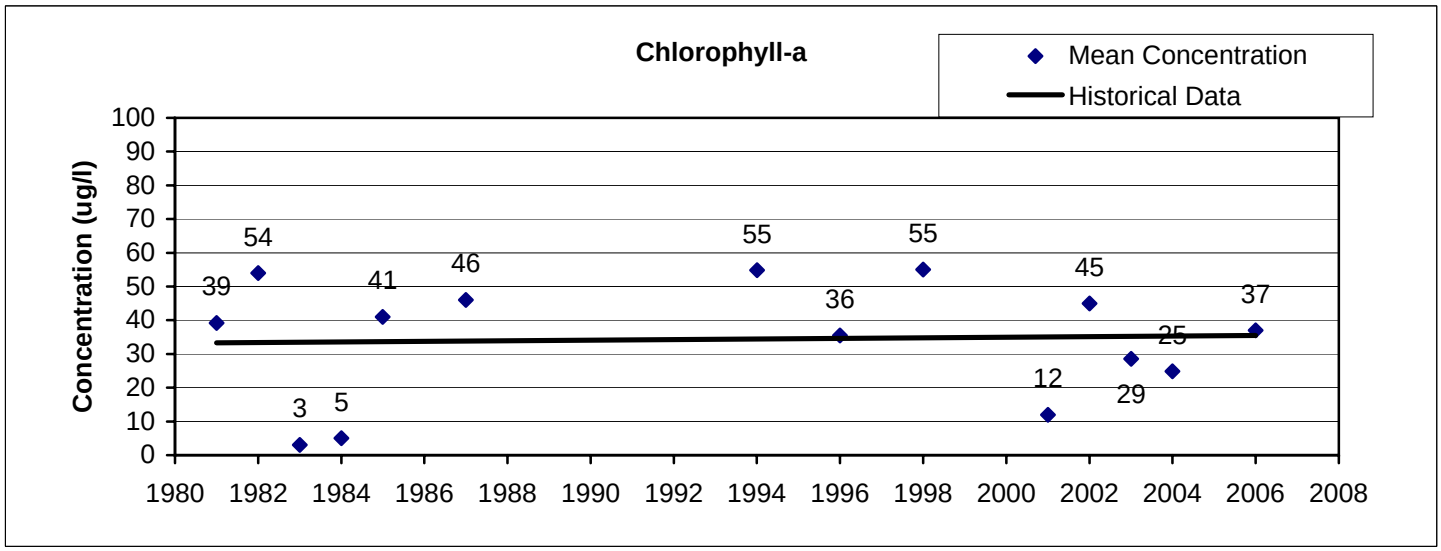
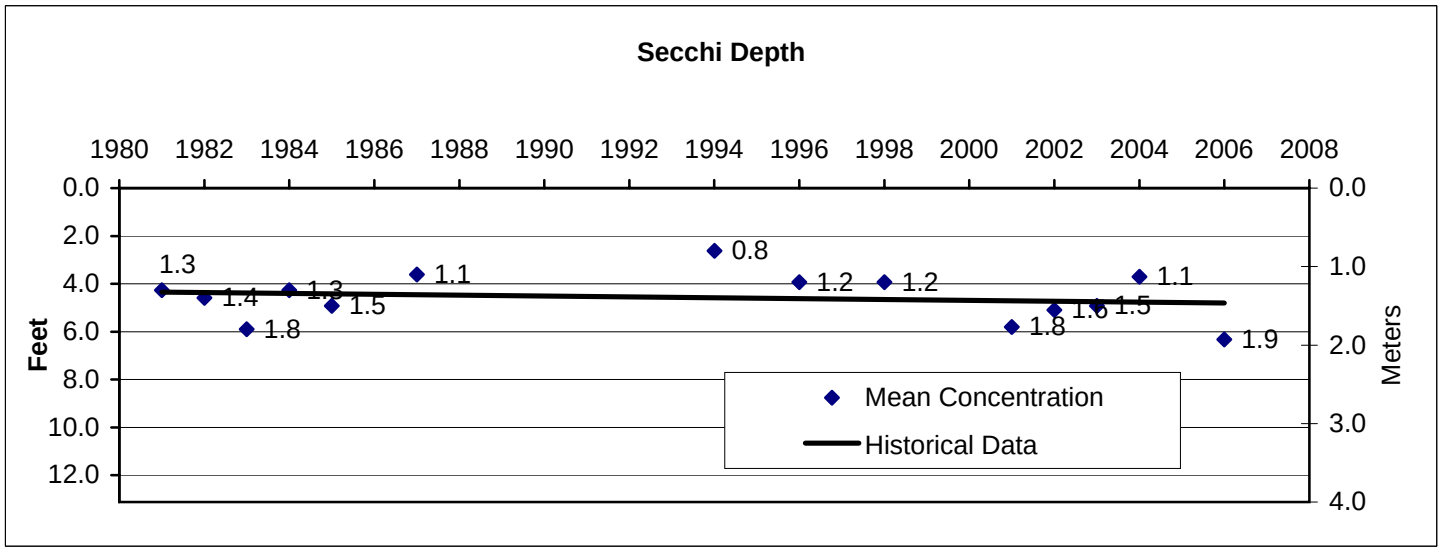
260
140
90
120
90
30
40
80
90
80
30
68
28
46
37
48
84
42
31
0
50
100
150
200
250
300
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008

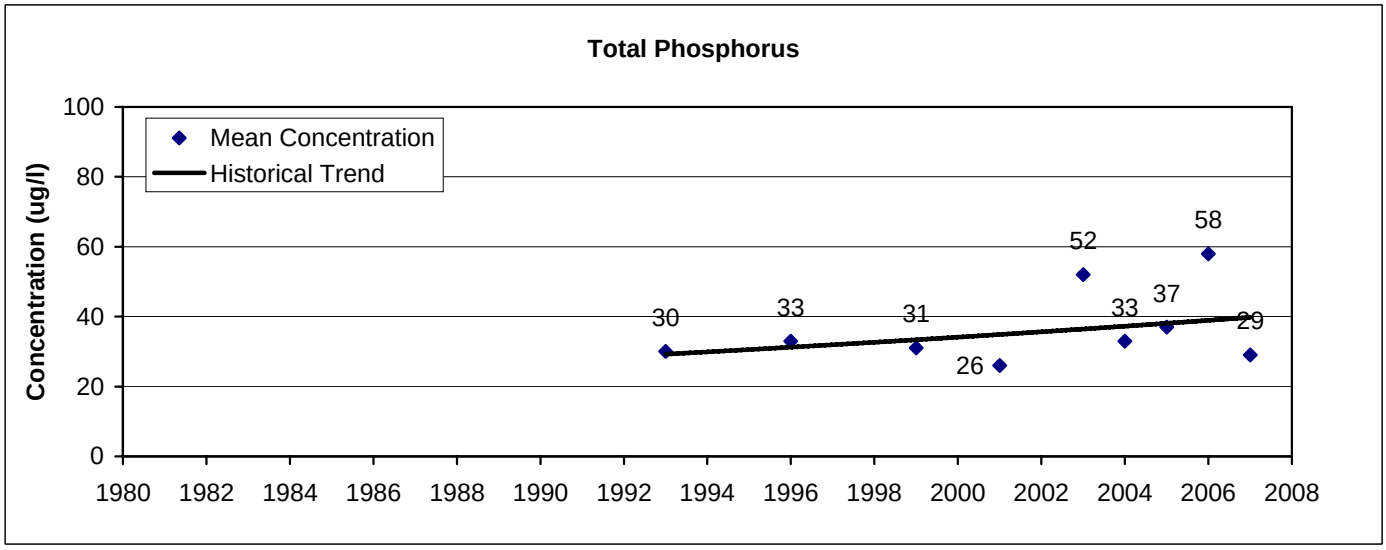

Chlorophyll-a
Concentration (ug/l)
Mean Concentration
Historical Trend
25
34
4
4
23
69
20
19
26
73
56
42
19
21
20
9
6
14
29
17
0
10
20
30
40
50
60
70
80
90
100
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008

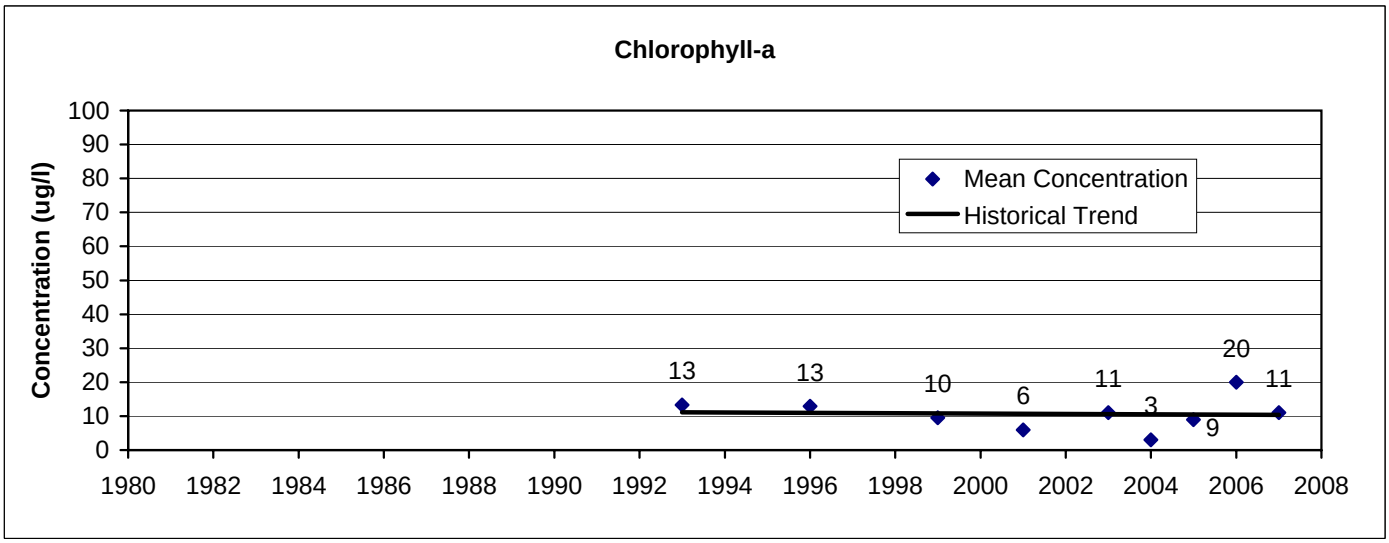

Secchi Depth
Feet
Meters
Mean Depth
Historical Trend
1.4
1.4
1.8
1.6
1.2
1.9
1.3
1.4
1.5
1.7
1.1
1.6
1.2
1.6
1.8
1.7
1.6
1.8
1.9
1.5
1.6
0
2
4
6
8
10
12
0.0
1.0
2.0
3.0
4.0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008

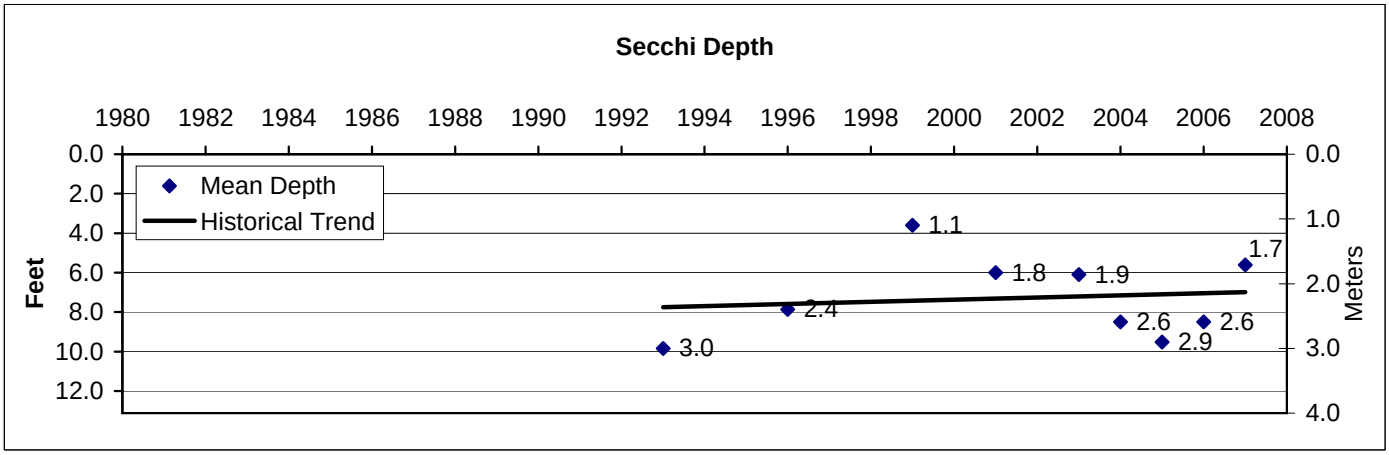

Total Phosphorus
Concentration (ug/l)
Mean Concentration
Historical Trend
350
300
250
200
150
100
50
0
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
220
260
300
140
170
50
40
88
86
43
95
66
45
47


Chlorophyll-a
Concentration (ug/l)
Mean Concentration
Historical Data
100
90
80
70
60
50
40
30
20
10
0
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
39
54
3
5
41
46
55
36
55
12
45
29
25
37

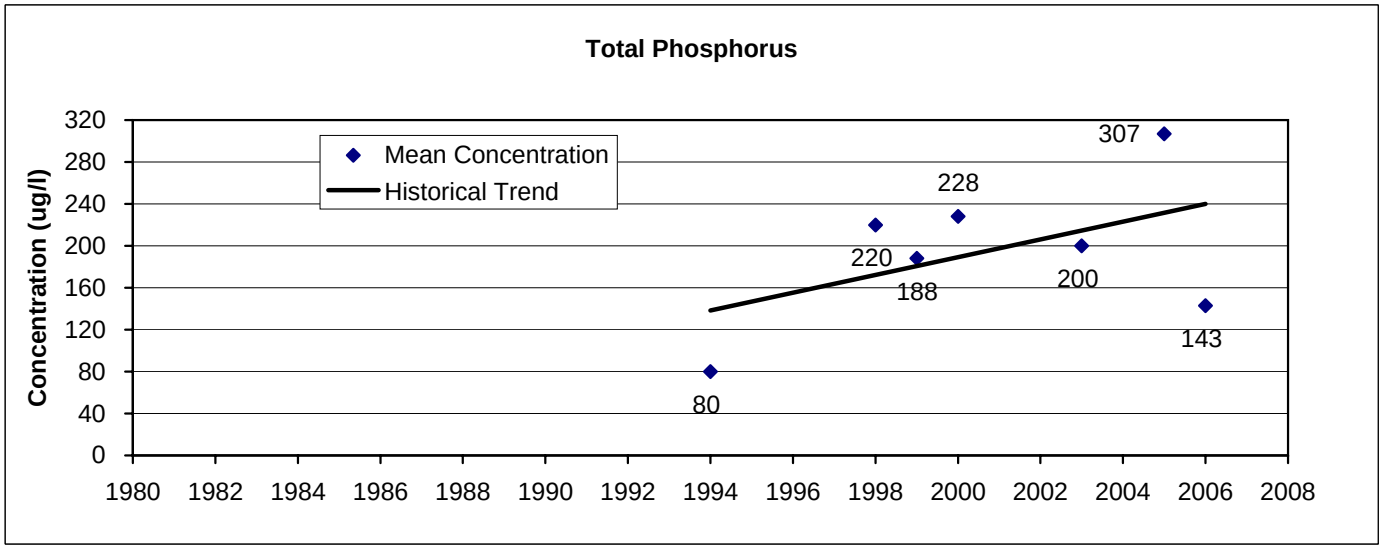

Secchi Depth
Feet
Meters
Mean Concentration
Historical Data
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
0.0
2.0
4.0
6.0
8.0
10.0
12.0
1.0
2.0
3.0
4.0
1.3
1.4
1.8
1.3
1.5
1.1
0.8
1.2
1.2
1.8
1.6
1.5
1.1
1.9

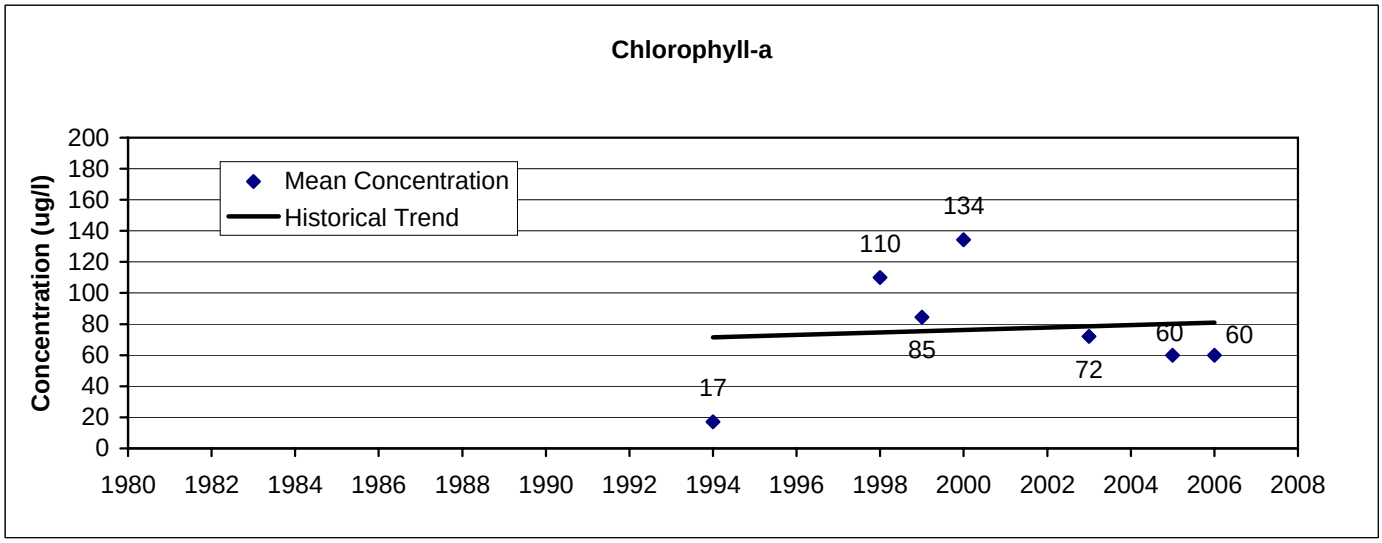


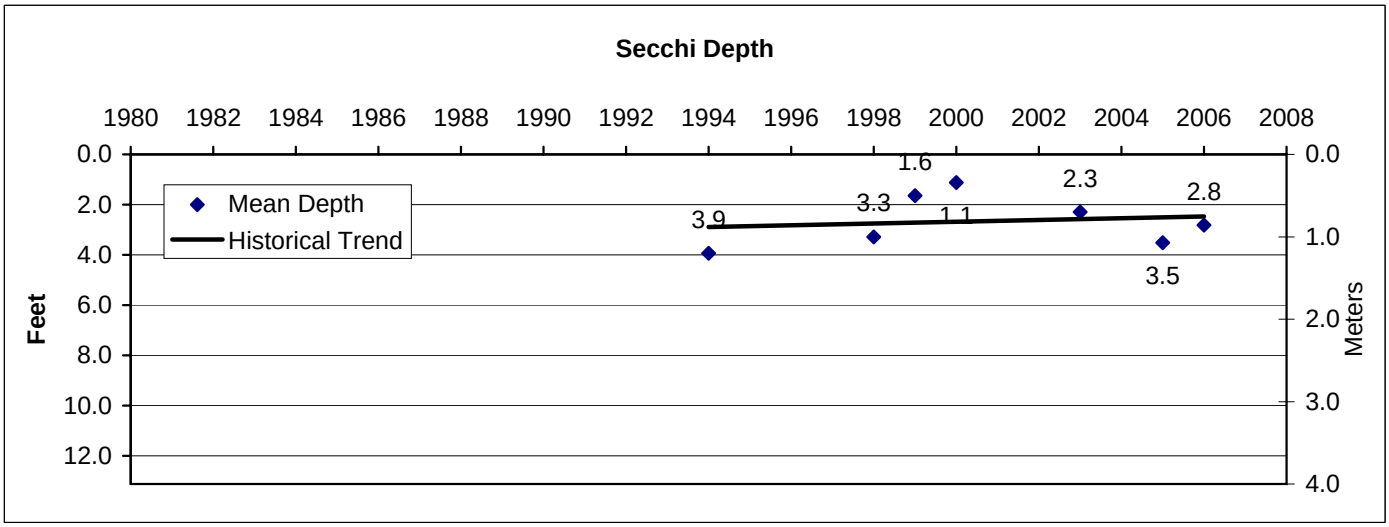




Clearwater River Watershed District	Wenck Associates, Inc. 1800 Pioneer Creek Center Environmental Engineers Maple Plain, MN 55359	Jan 2008
Cedar Lake Historical Data		Appendix C

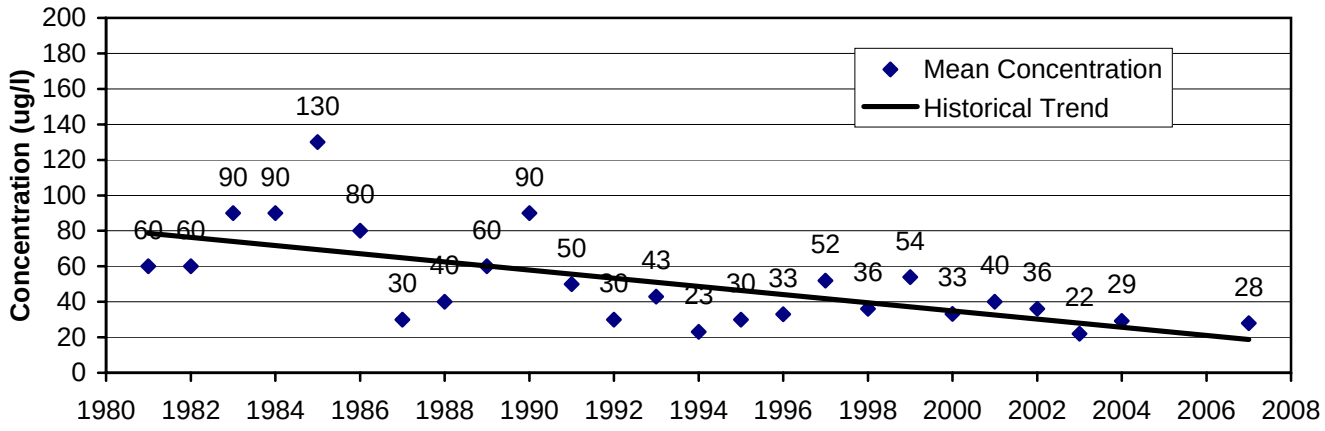




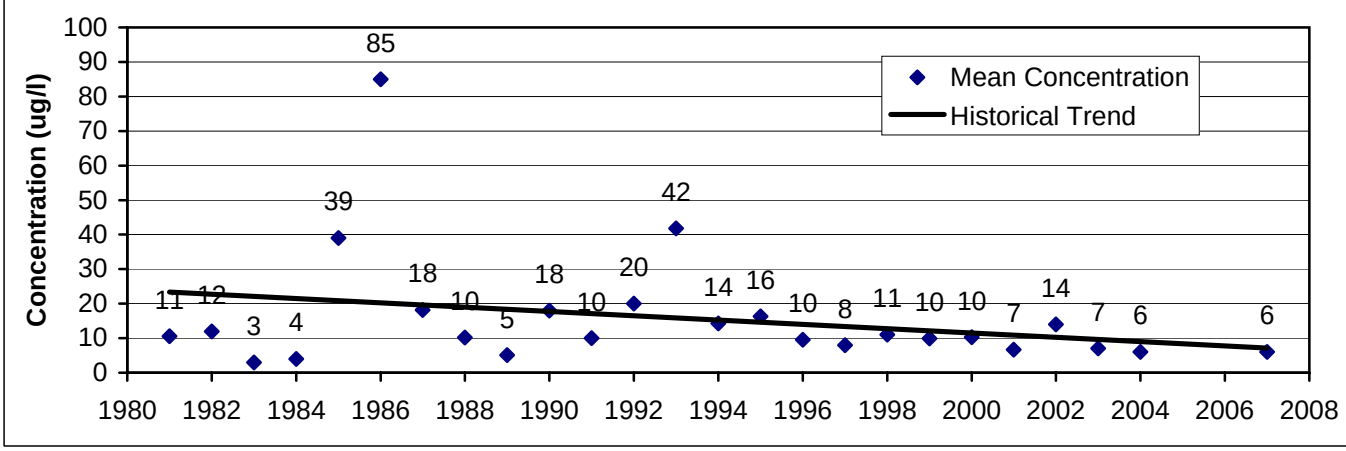


Clearwater River Watershed District	Wenck Associates, Inc. 1800 Pioneer Creek Center Environmental Engineers Maple Plain, MN 55359	Jan 2008
Clear Lake Historical Data		Appendix C

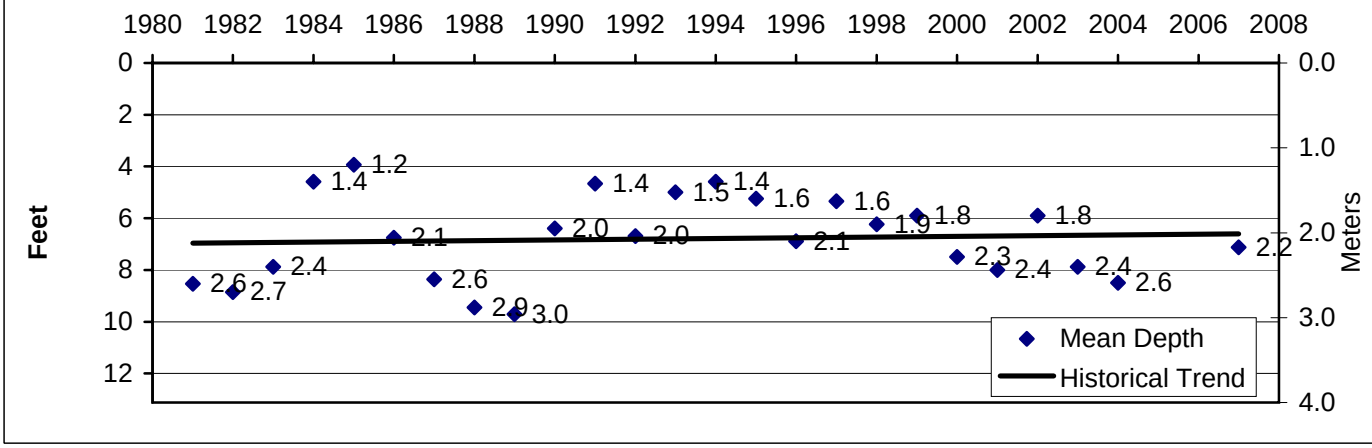
Total Phosphorus



Chlorophyll-a

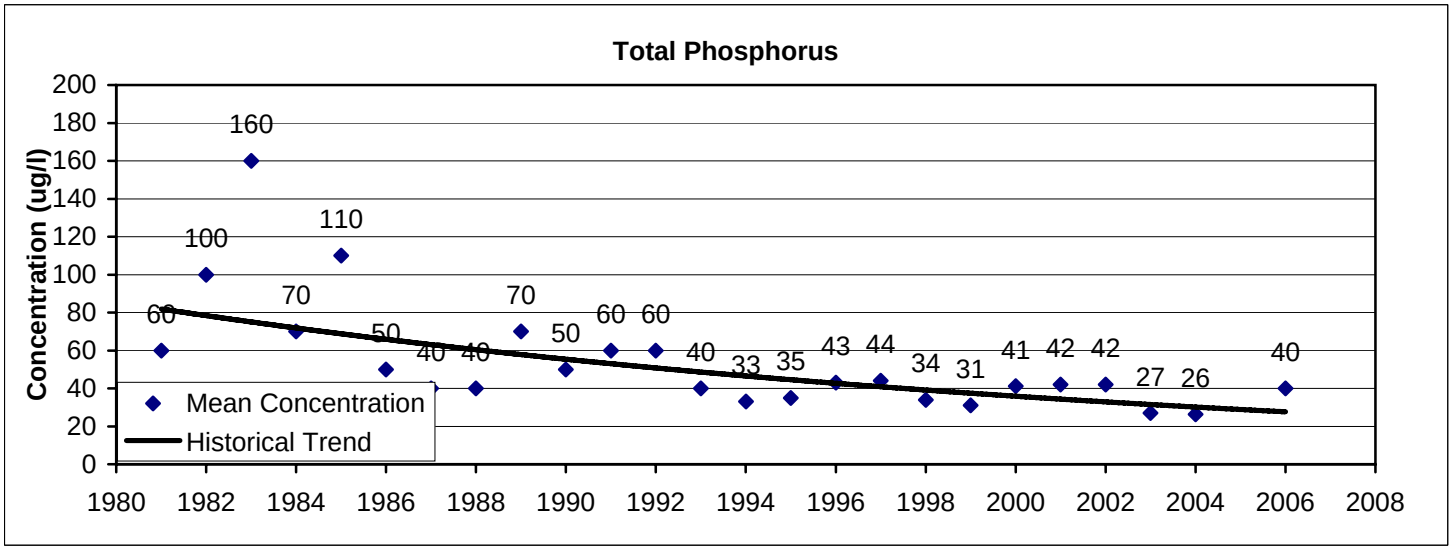


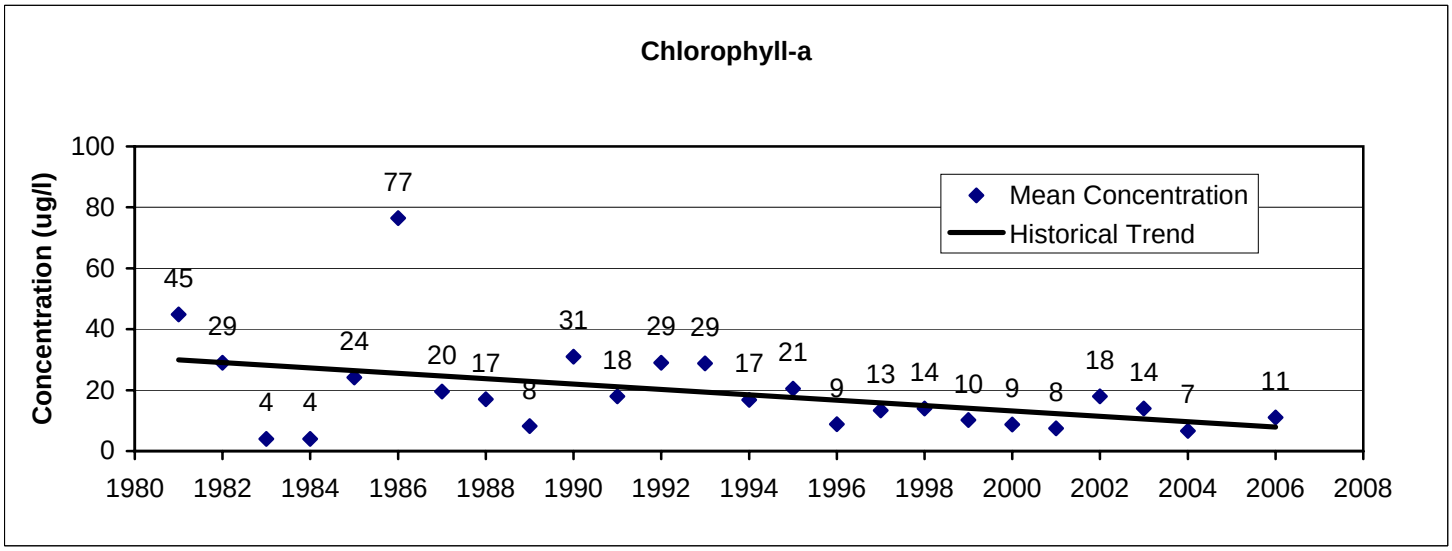
Secchi Depth

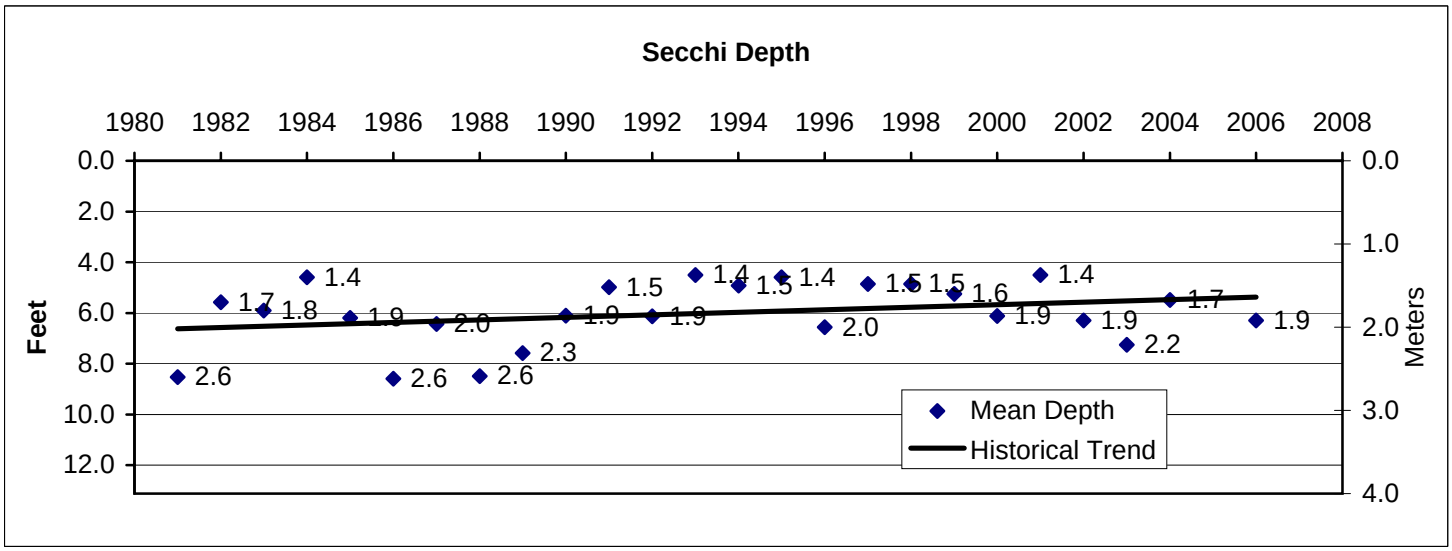


Clearwater River Watershed District	Wenck Associates, Inc. Environmental Engineers 1800 Pioneer Creek Center Maple Plain, MN 55359	Jan 2008
Clearwater Lake East Historical Data		Appendix C

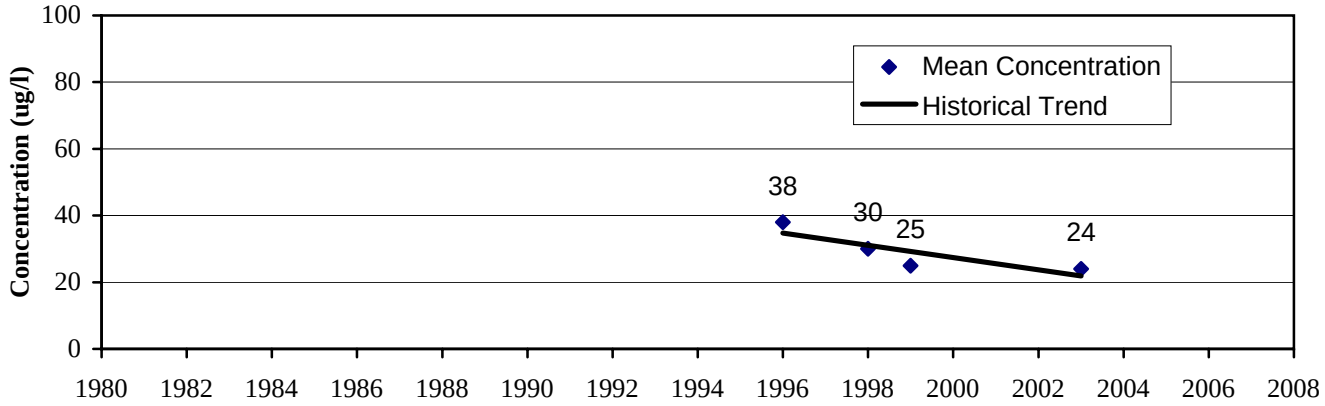
T:\0002\106\LAKE_WQ_07Clearwater East


Total Phosphorus
Concentration (ug/l)
Mean Concentration
Historical Trend
60 100 160 70 110 50 40 40 70 50 60 60 40 33 35 43 44 34 31 41 42 42 27 26 40
0 20 40 60 80 100 120 140 160 180 200
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008

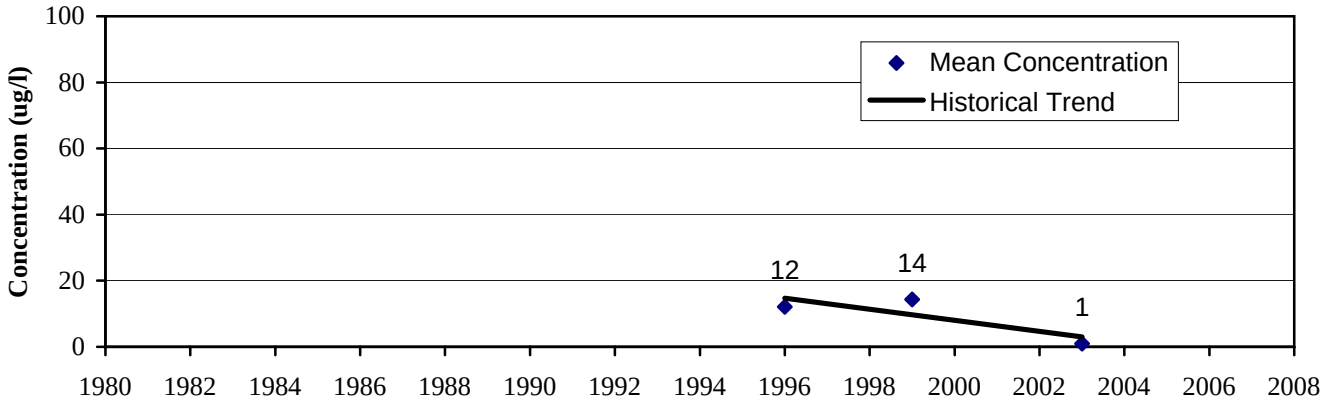

Chlorophyll-a
Concentration (ug/l)
Mean Concentration
Historical Trend
45 29 4 4 24 77 20 17 8 31 18 29 29 17 21 9 13 14 10 9 8 18 14 7 11
0 20 40 60 80 100
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008


Secchi Depth
Feet
Meters
Mean Depth
Historical Trend
1.7 1.8 1.4 1.9 2.0 2.6 2.6 2.6 2.3 1.9 1.5 1.9 1.4 1.5 1.4 2.0 1.5 1.5 1.6 1.9 1.4 1.9 2.2 1.7 1.9
0.0 2.0 4.0 6.0 8.0 10.0 12.0
0.0 1.0 2.0 3.0 4.0
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008

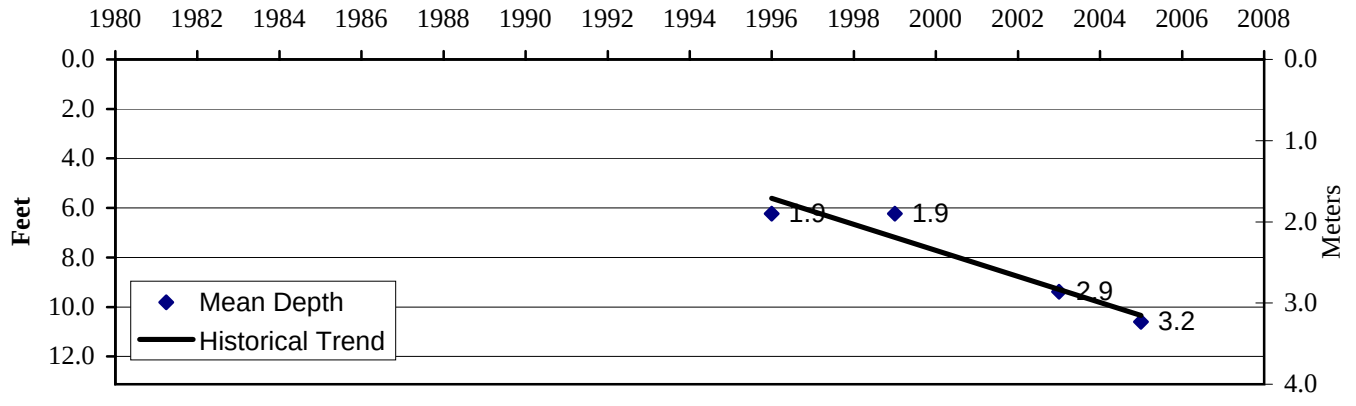
Total Phosphorus



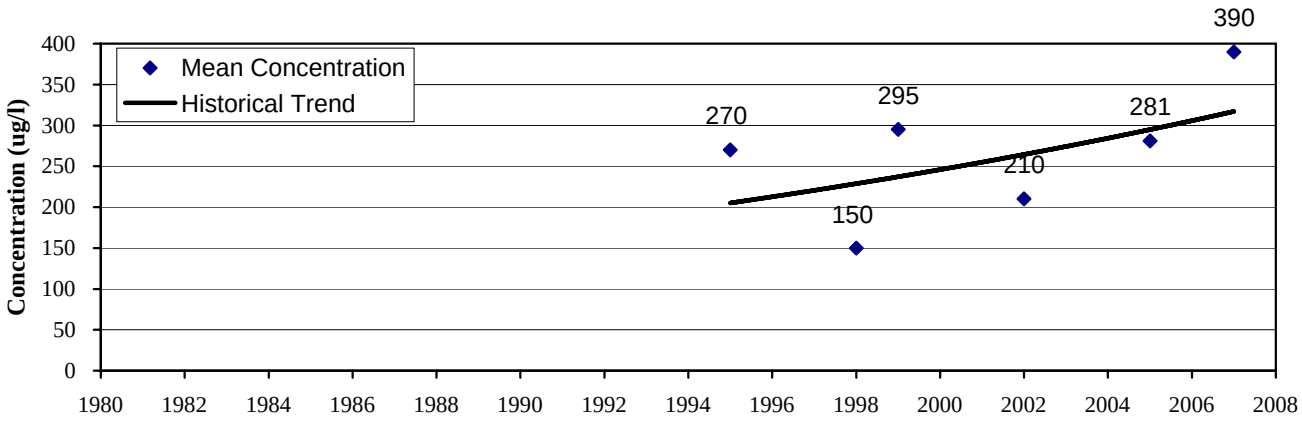
Chlorophyll-*a*



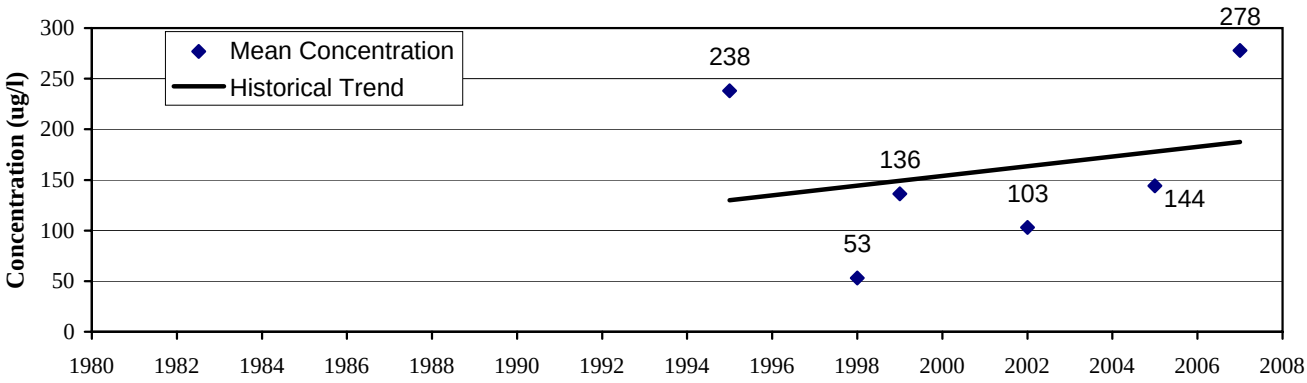
Secchi Depth



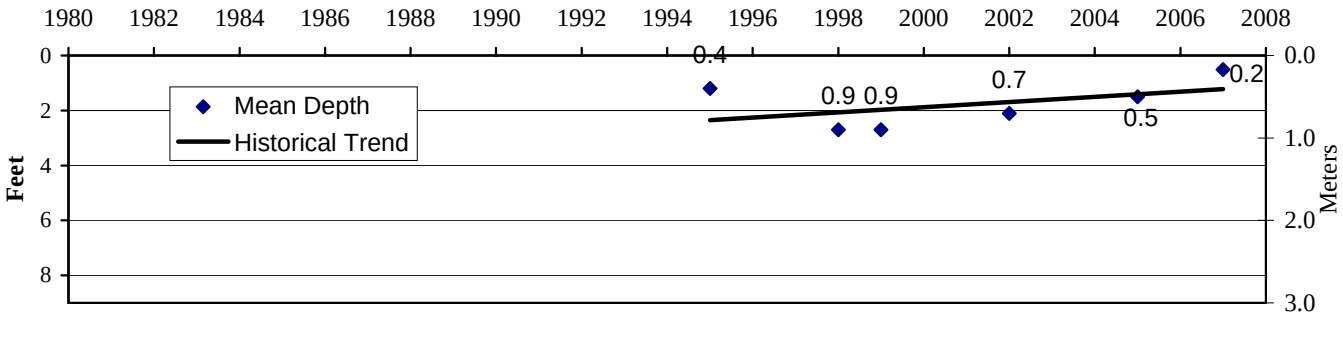
Total Phosphorus



Chlorophyll-*a*

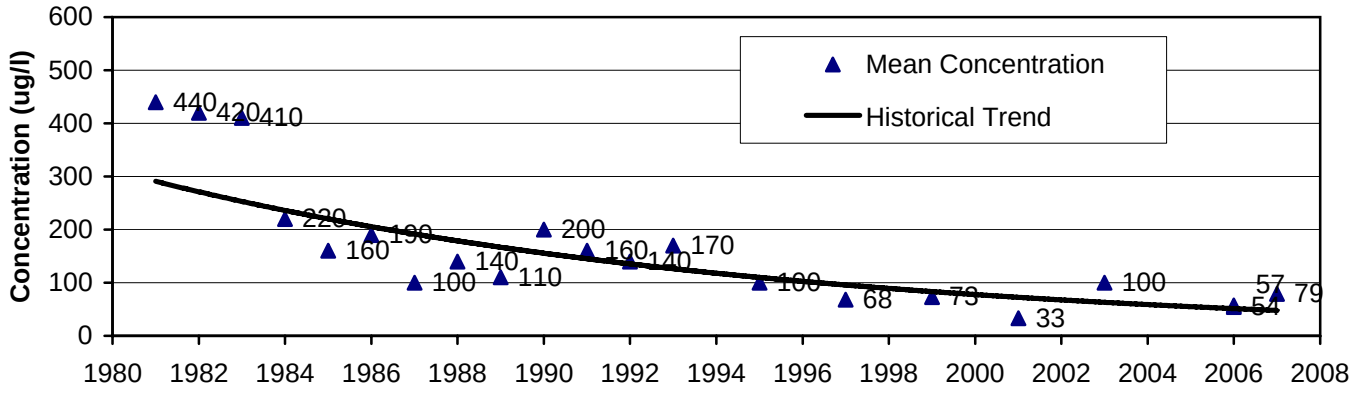


Secchi Depth

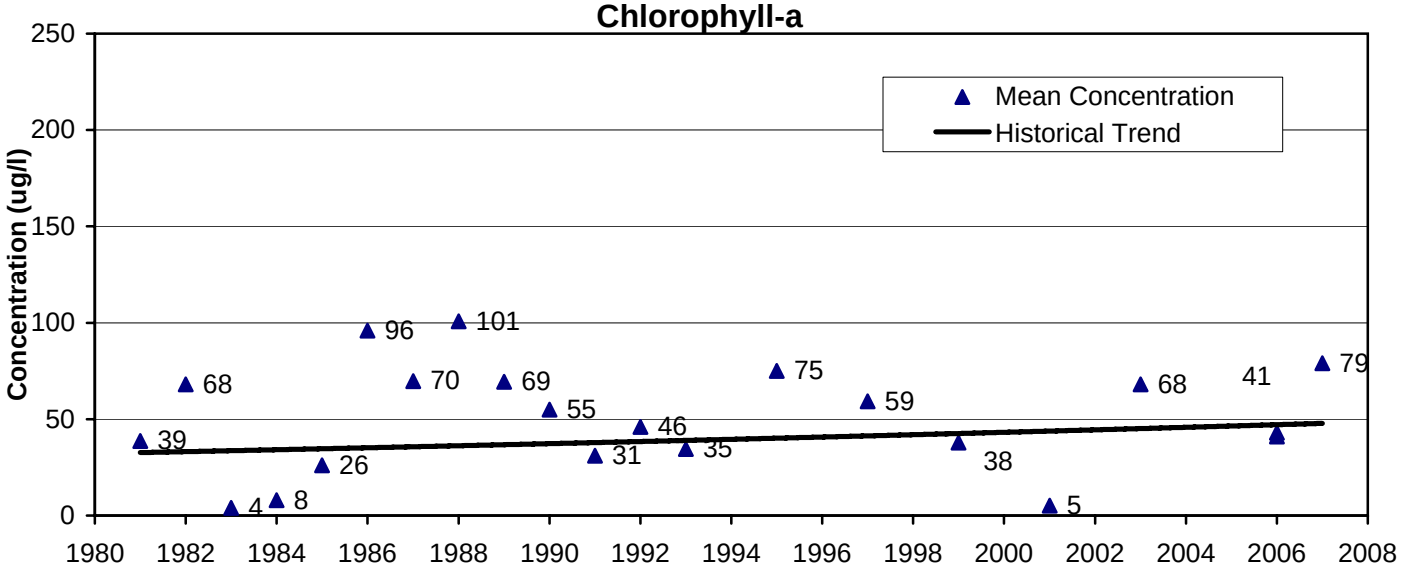


Clearwater River Watershed District	Wenck Associates, Inc. 1800 Pioneer Creek Center Environmental Engineers Maple Plain, MN 55359	Jan 2008
Henshaw Lake Historical Data		Appendix C

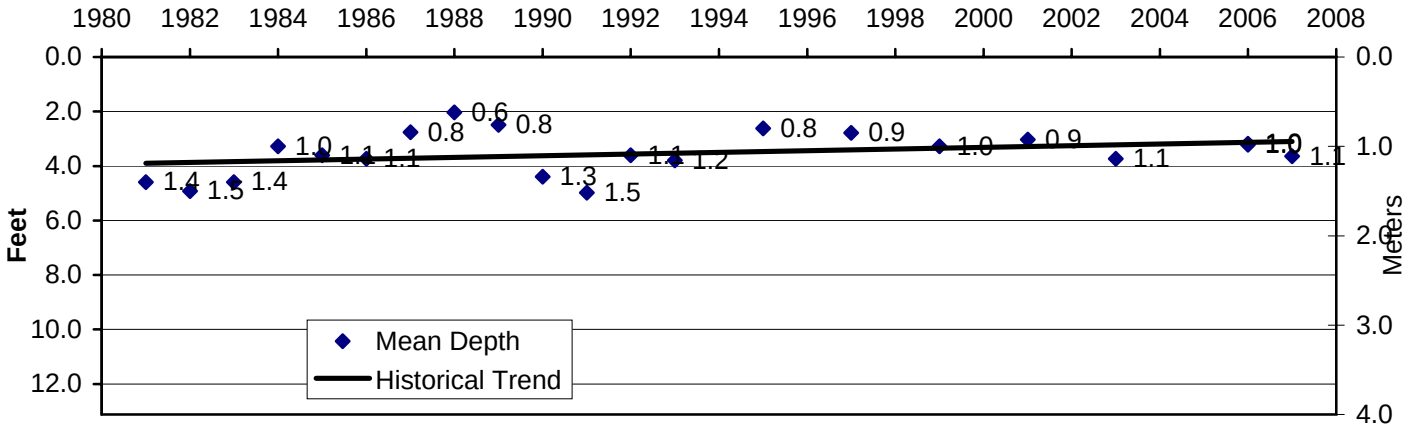
Total Phosphorus

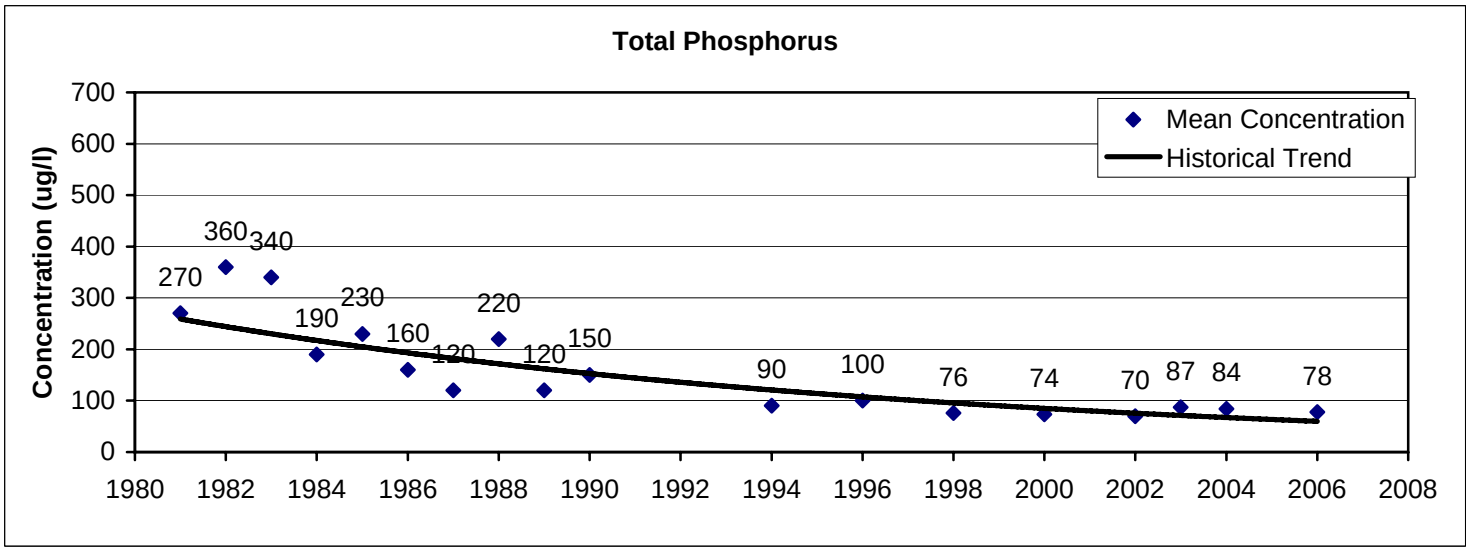


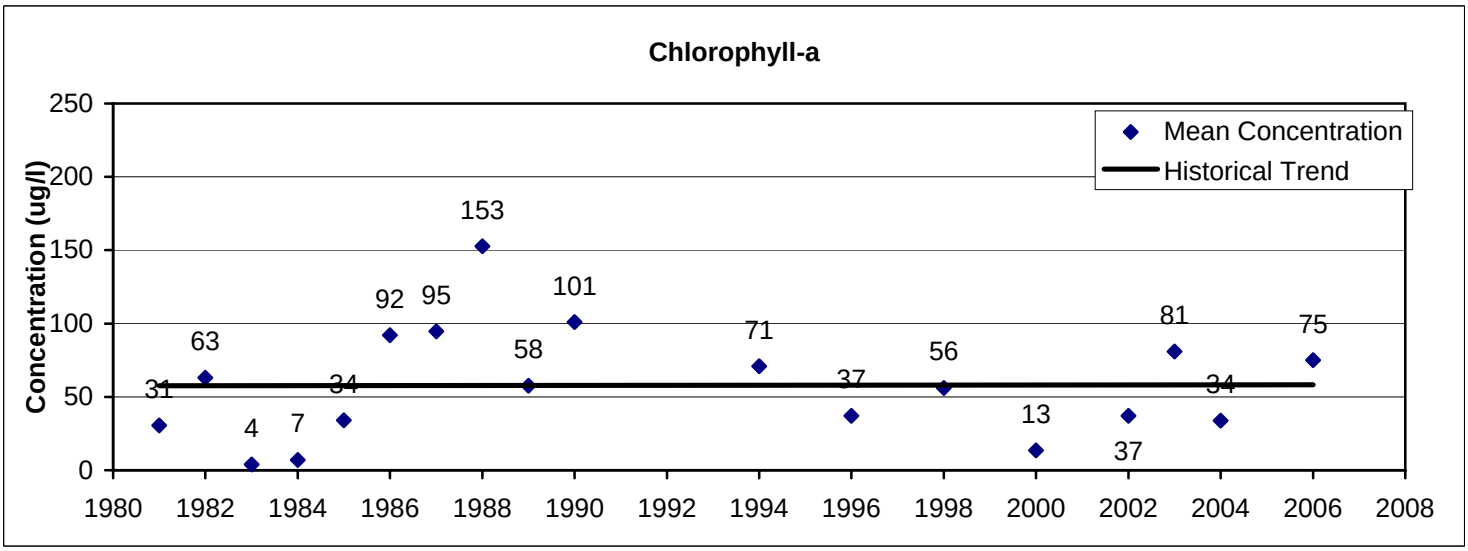
Chlorophyll-a

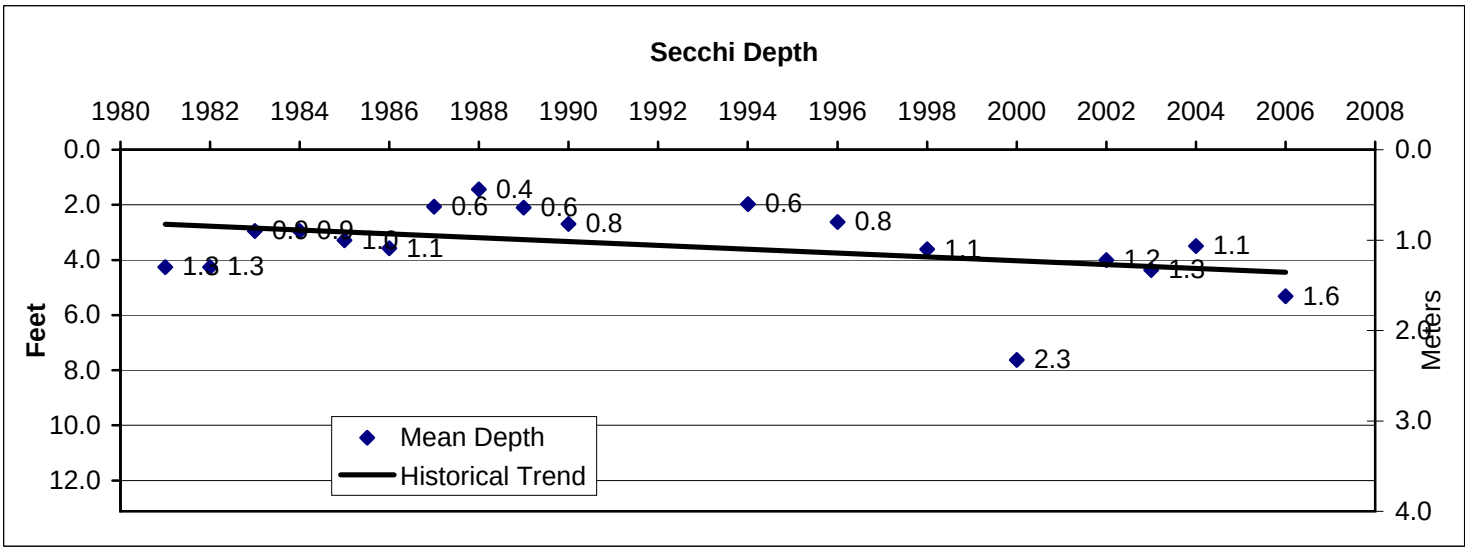


Secchi Depth

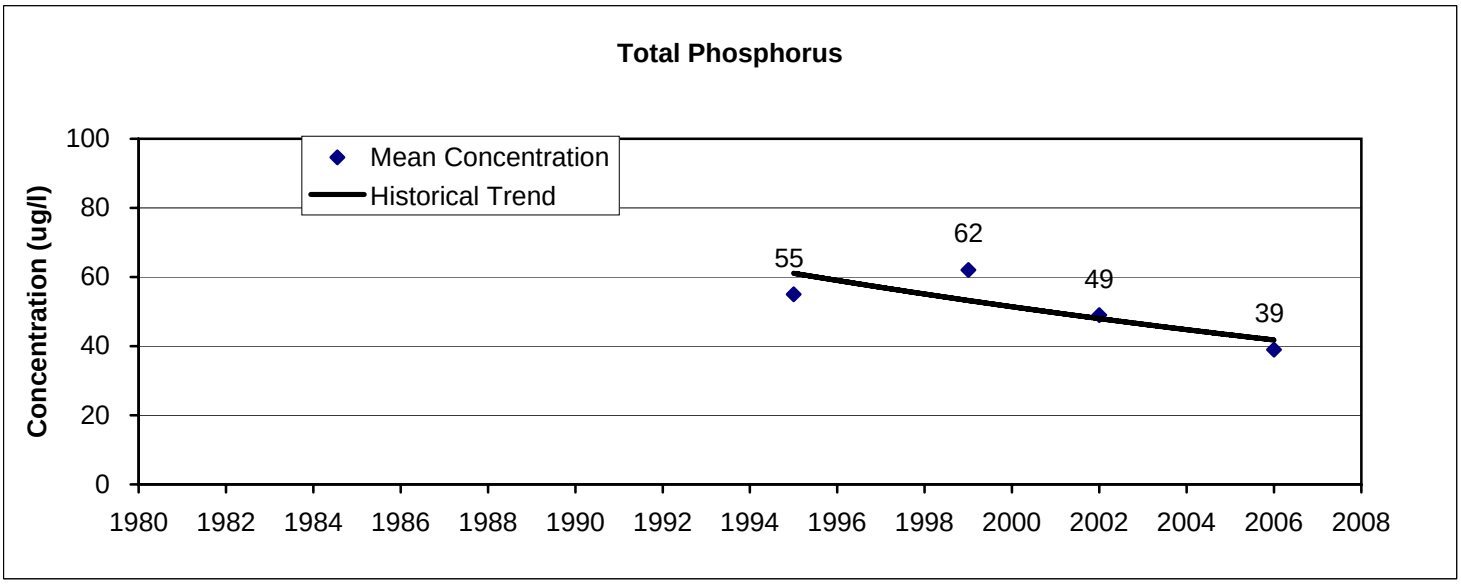


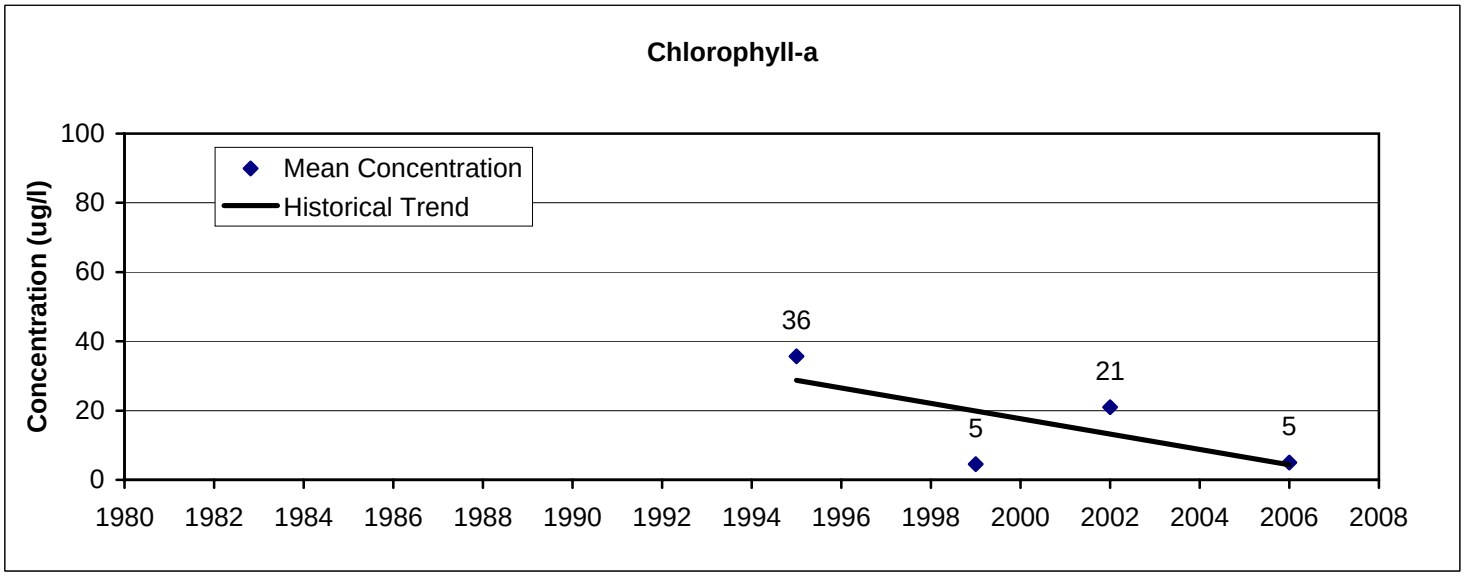


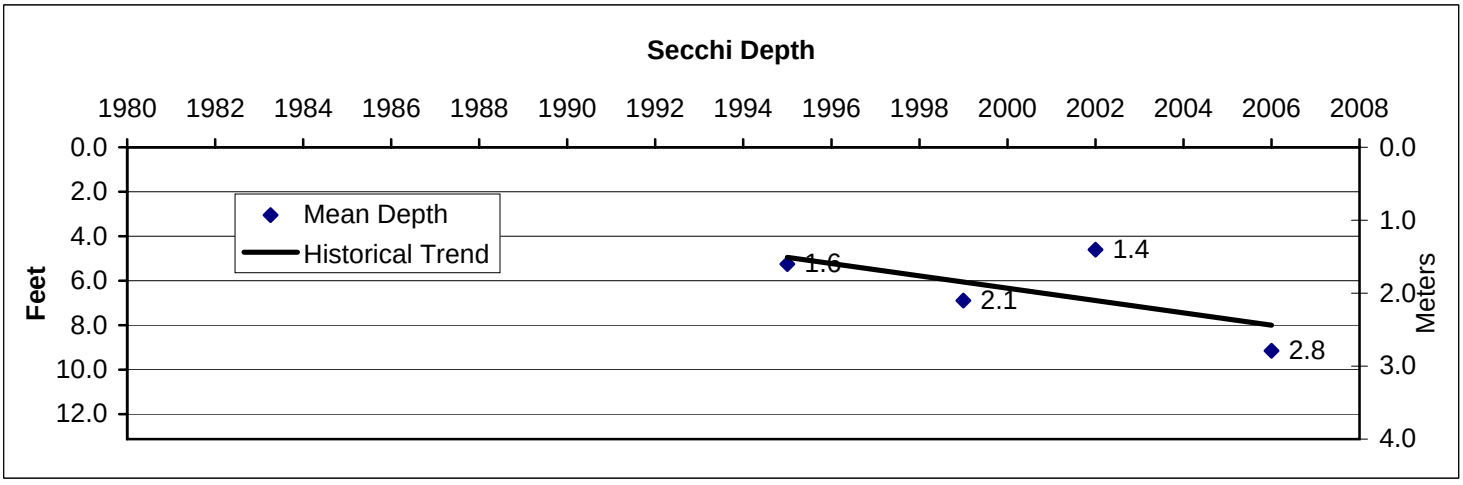


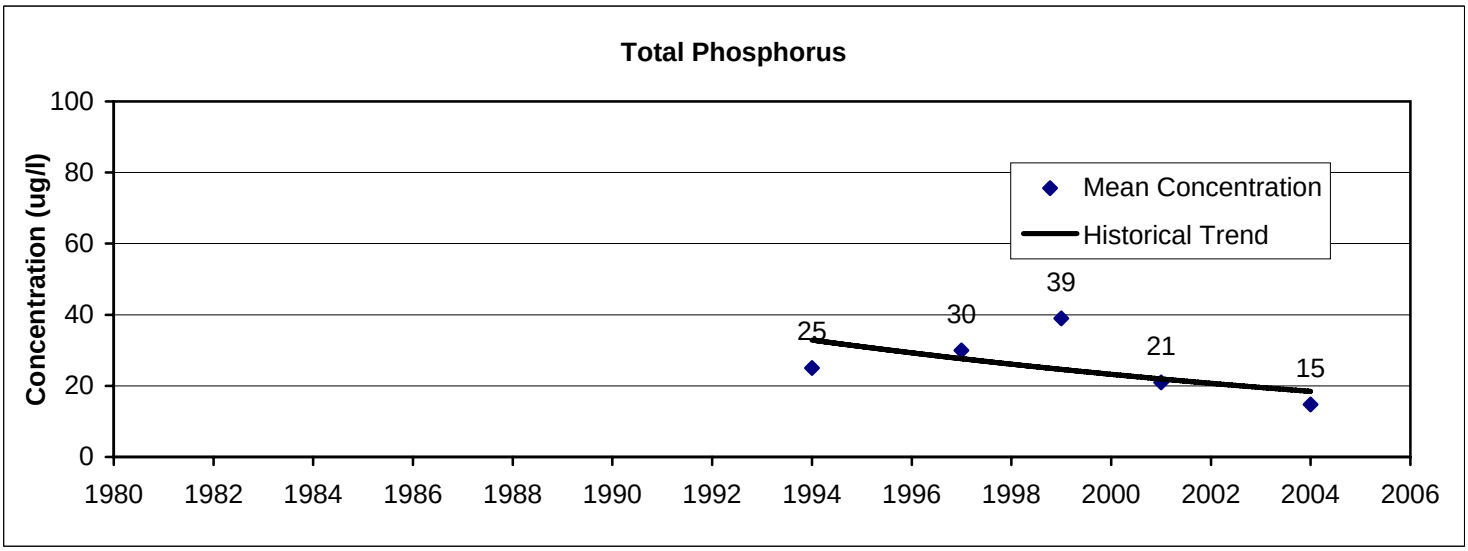


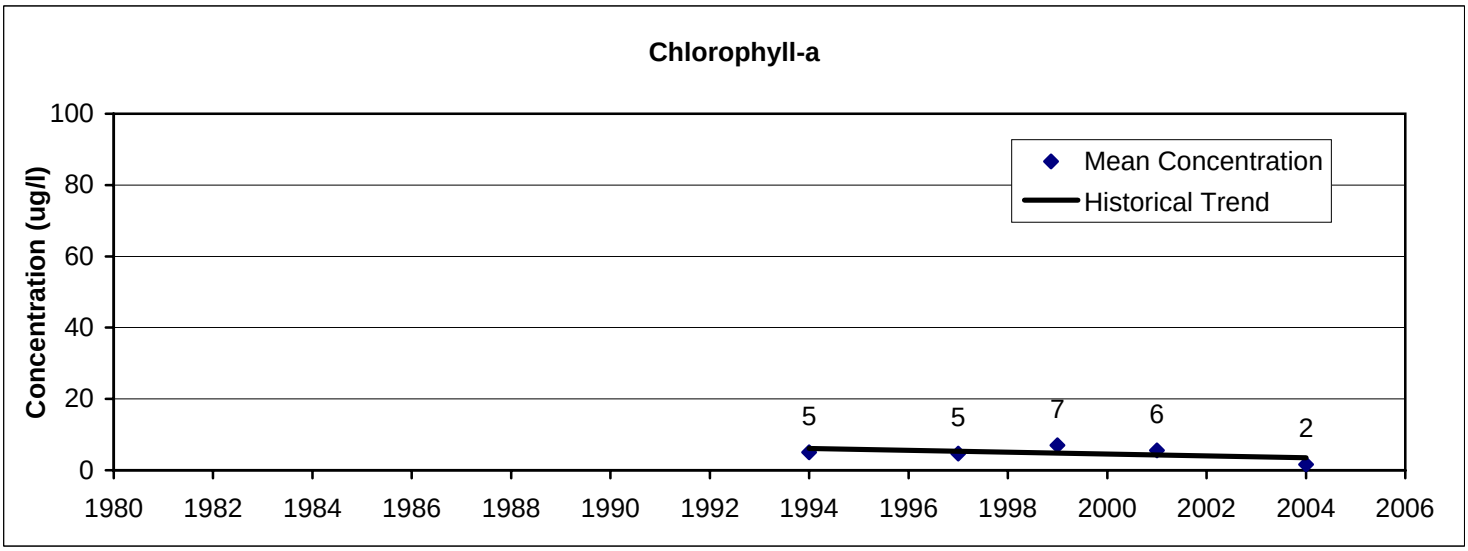
Clearwater River Watershed District	Wenck Associates, Inc. Environmental Engineers 1800 Pioneer Creek Center Maple Plain, MN 55359	Jan 2008
Lake Marie Historical Data		Appendix C

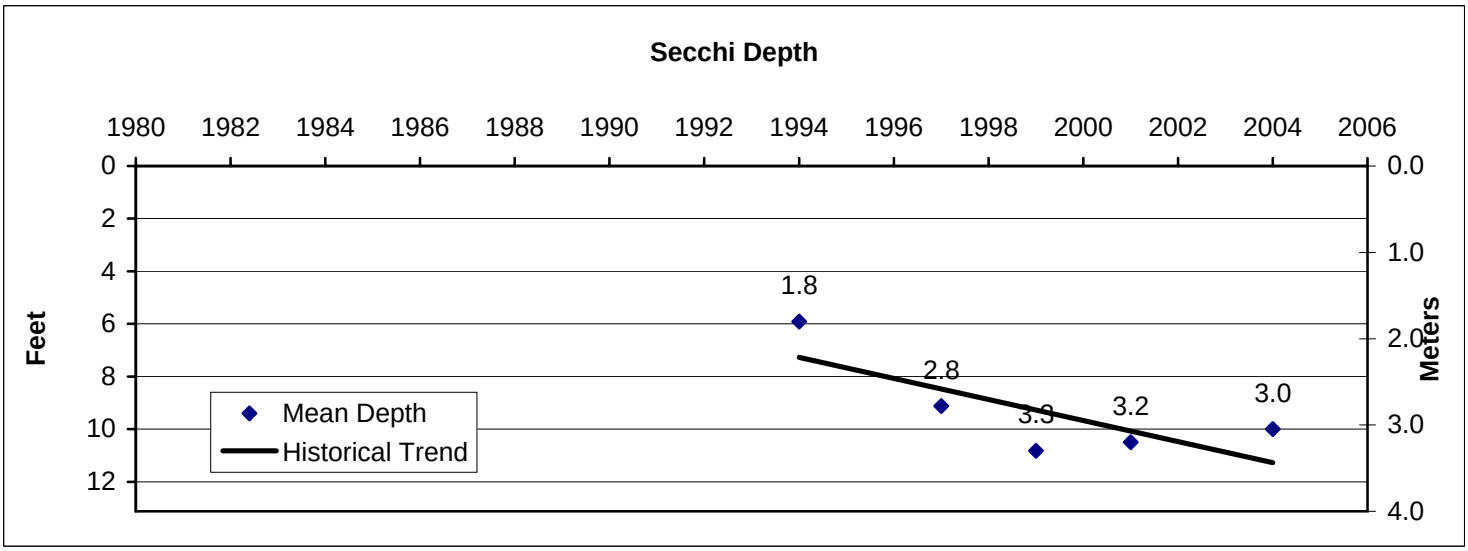

Total Phosphorus
Concentration (ug/l)
Mean Concentration
Historical Trend
55
62
49
39
0
20
40
60
80
100
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008


Chlorophyll-a
Concentration (ug/l)
Mean Concentration
Historical Trend
36
5
21
5
0
20
40
60
80
100
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008


Secchi Depth
Feet
Meters
Mean Depth
Historical Trend
1.6
2.1
1.4
2.8
0.0
2.0
4.0
6.0
8.0
10.0
12.0
0.0
1.0
2.0
3.0
4.0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008

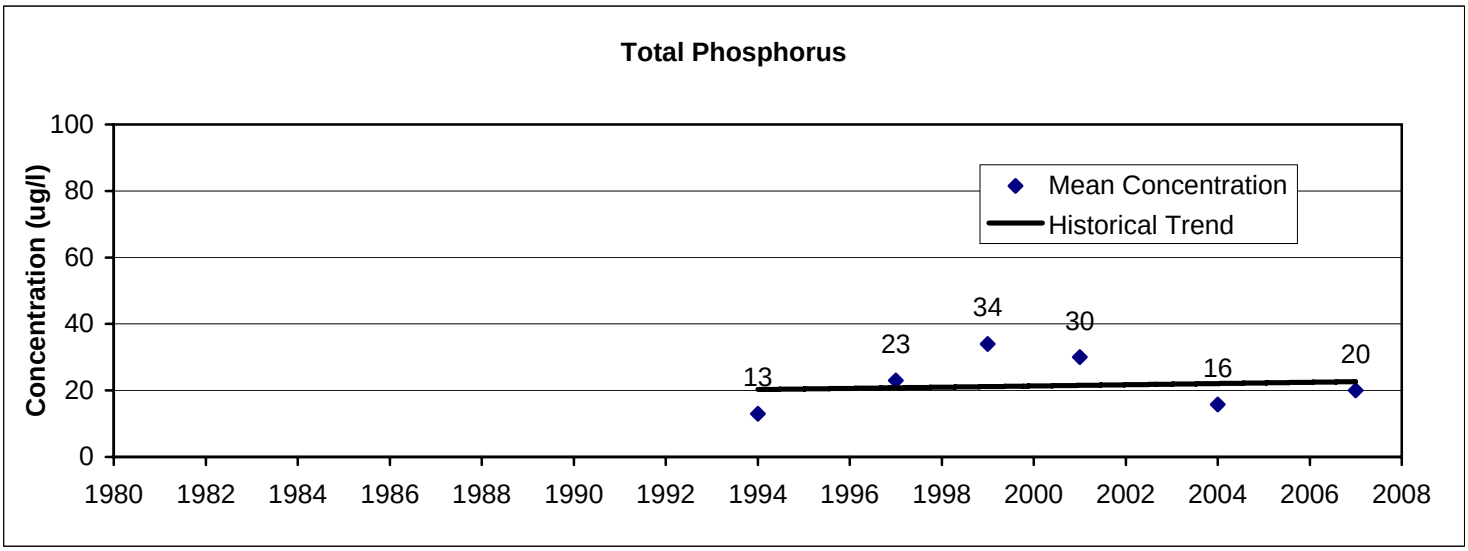


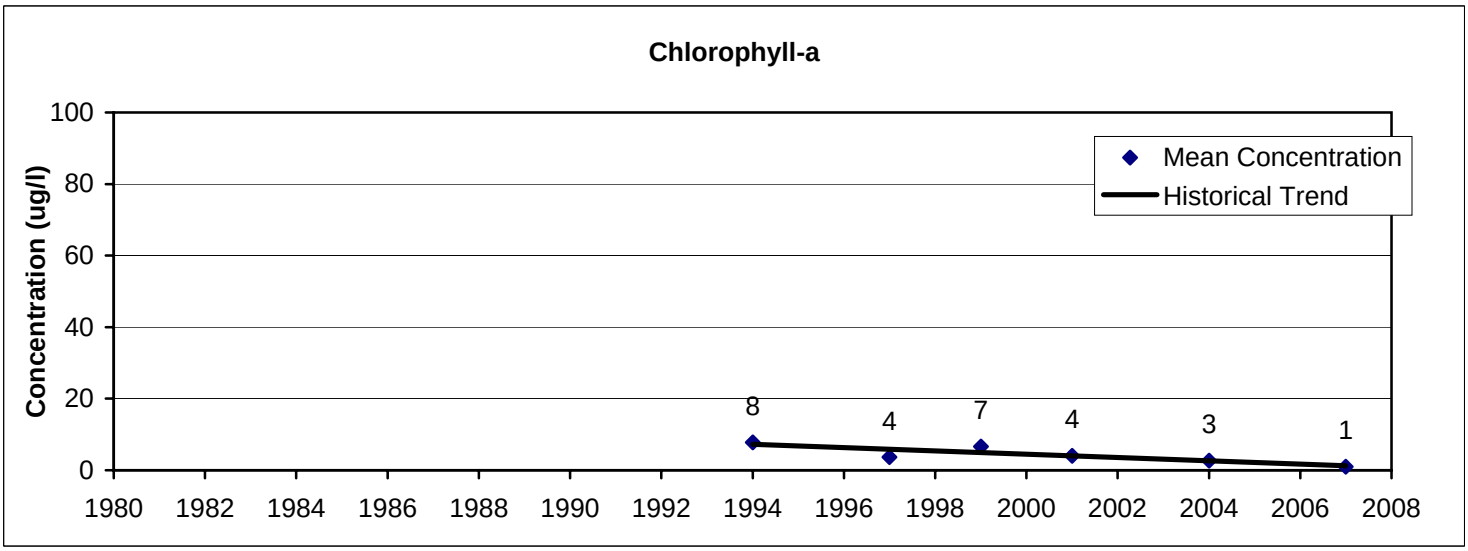


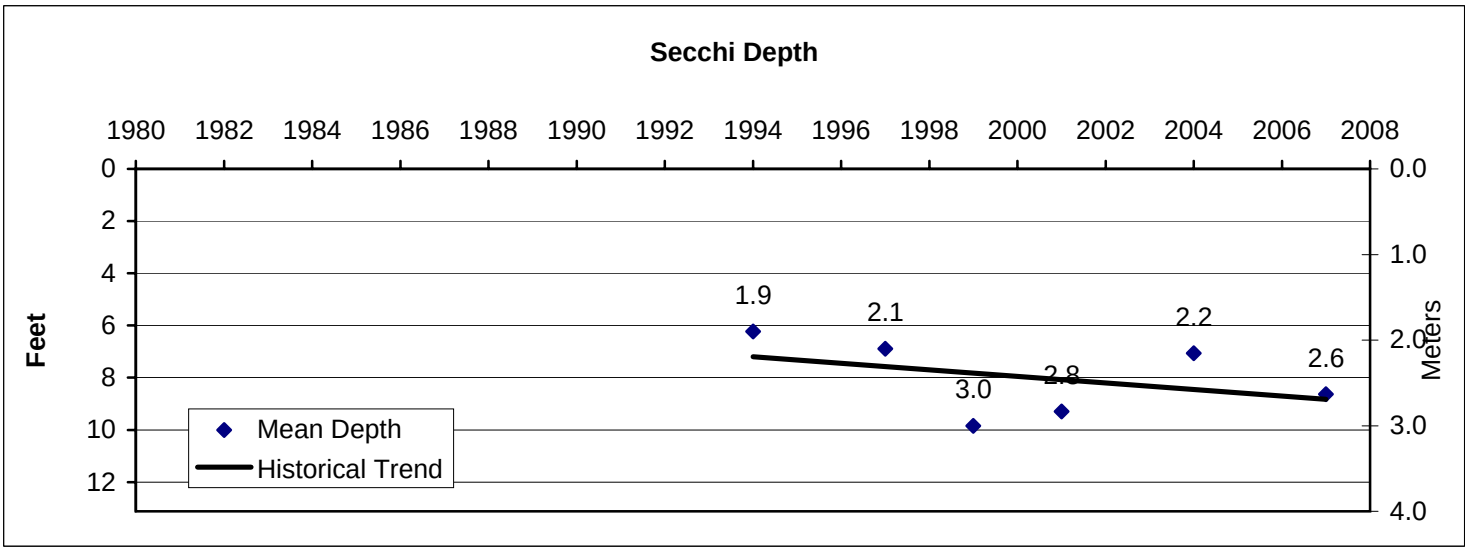


Clearwater River Watershed District	Wenck Associates, Inc. 1800 Pioneer Creek Center Environmental Engineers Maple Plain, MN 55359	Jan 2008
Nixon Lake Historical Data		Appendix C

T:\0002\106\LAKE_WQ_07Nixon Lake

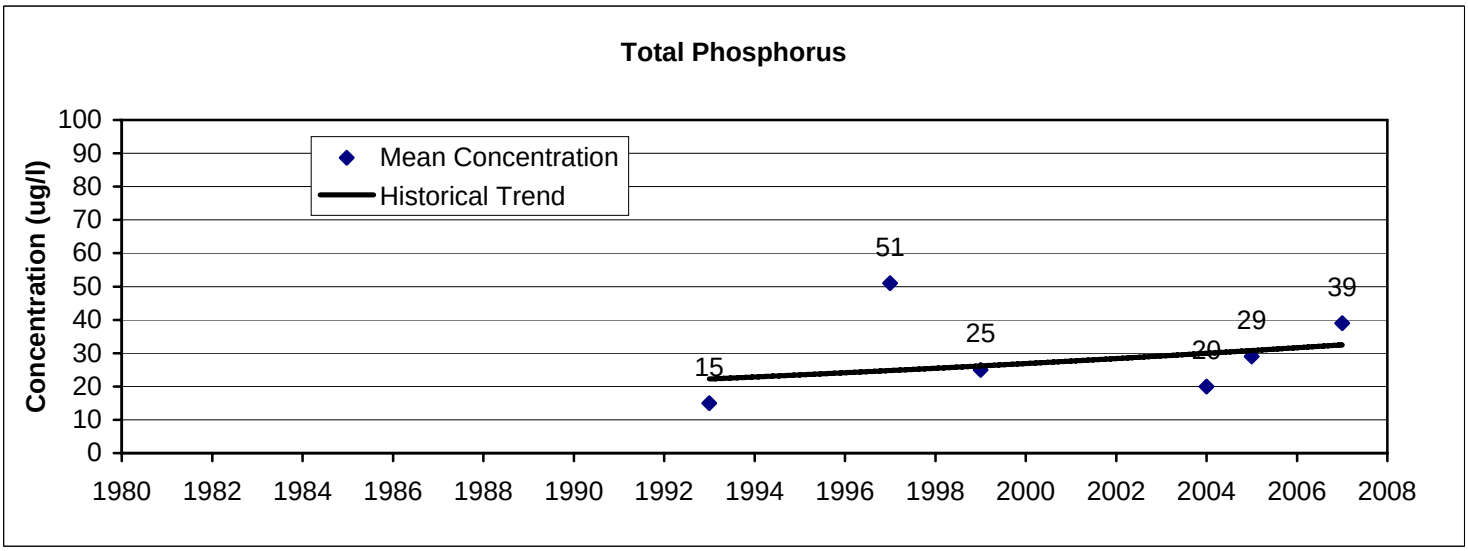


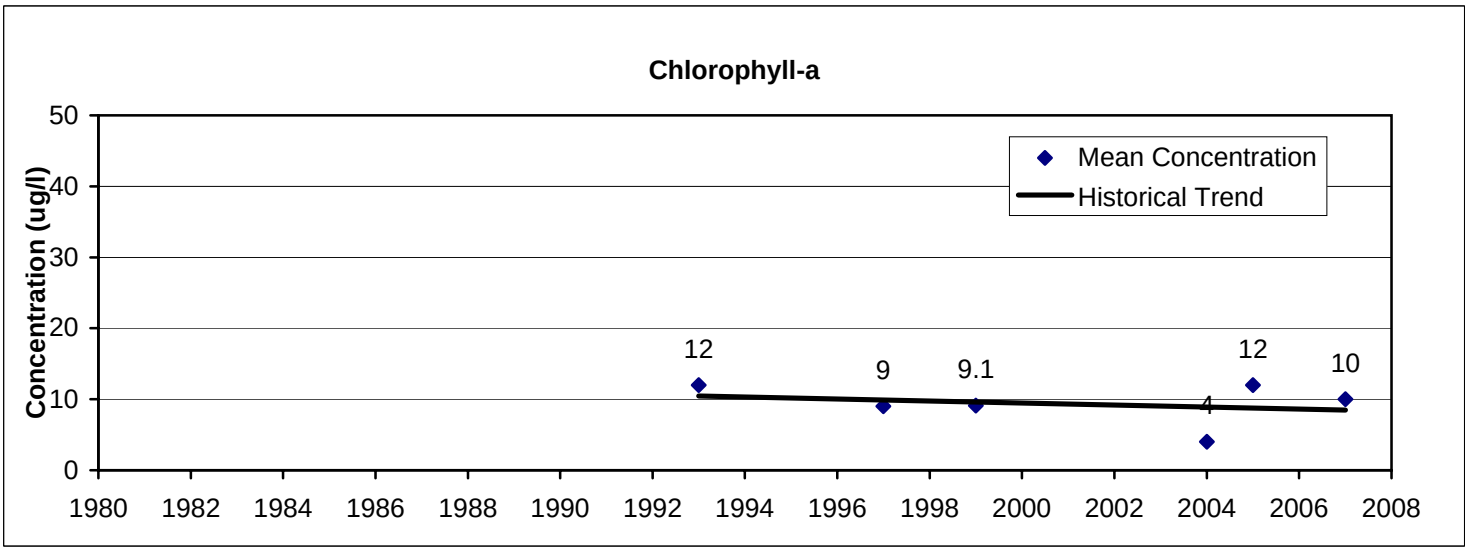


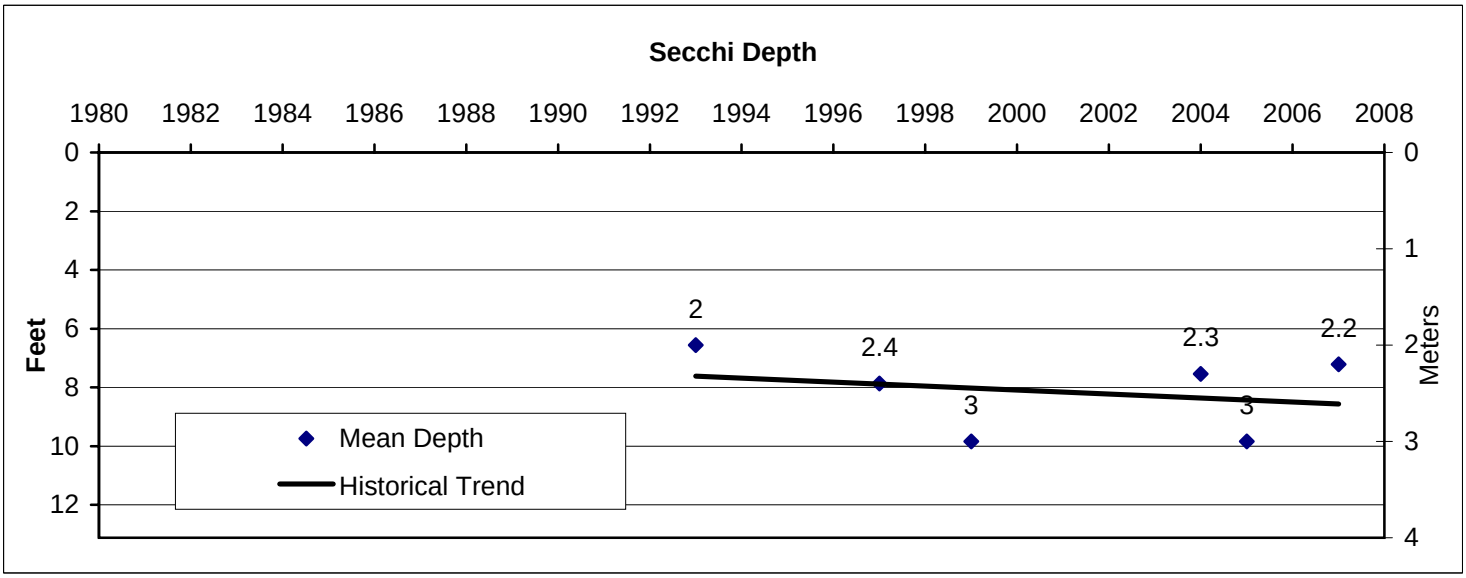


Clearwater River Watershed District	Wenck Associates, Inc. 1800 Pioneer Creek Center Environmental Engineers Maple Plain, MN 55359	Jan 2008
Otter Lake Historical Data		Appendix C

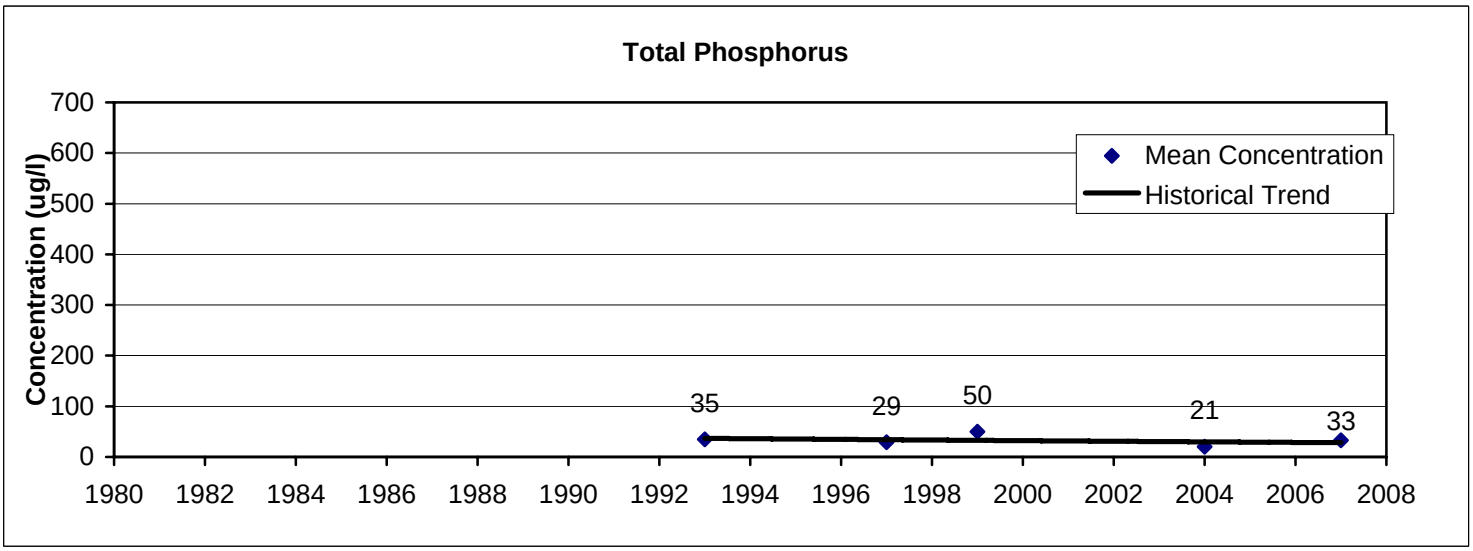
T:\0002\106\LAKE_WQ_07Otter Lake

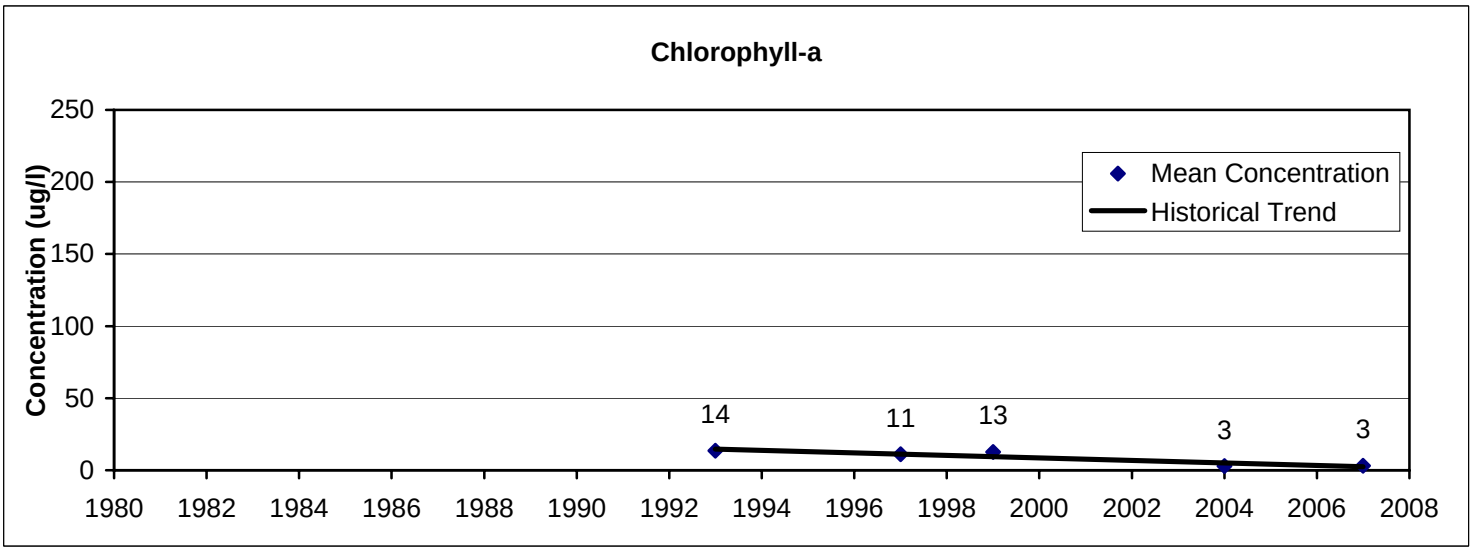


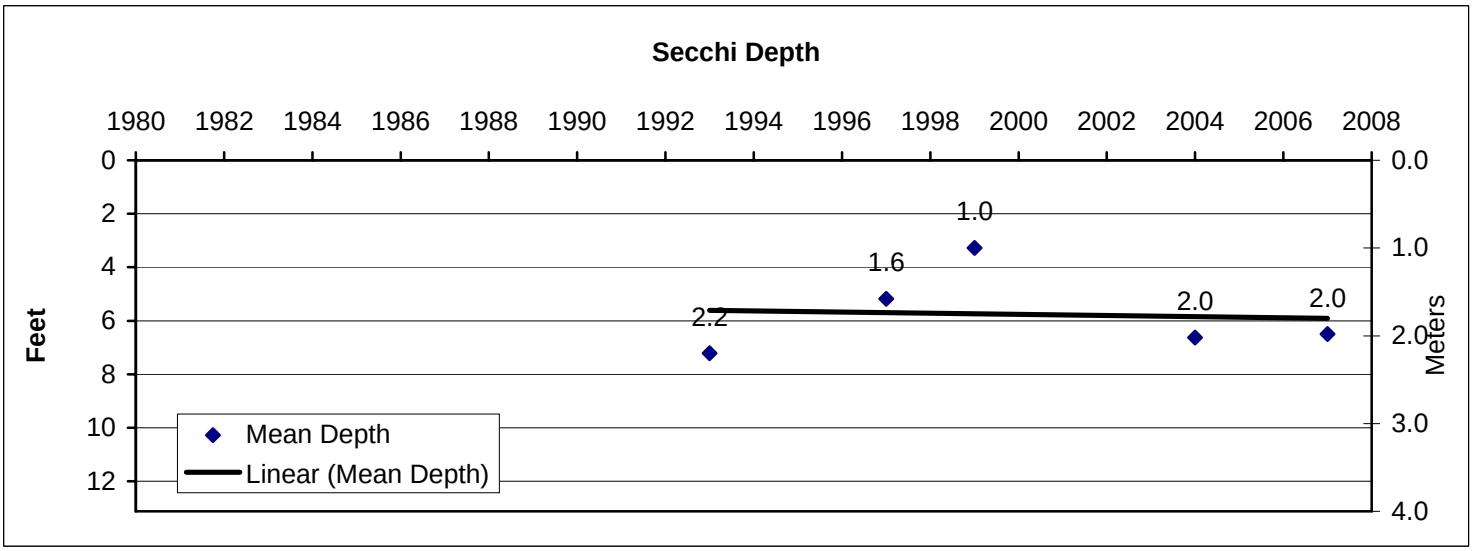


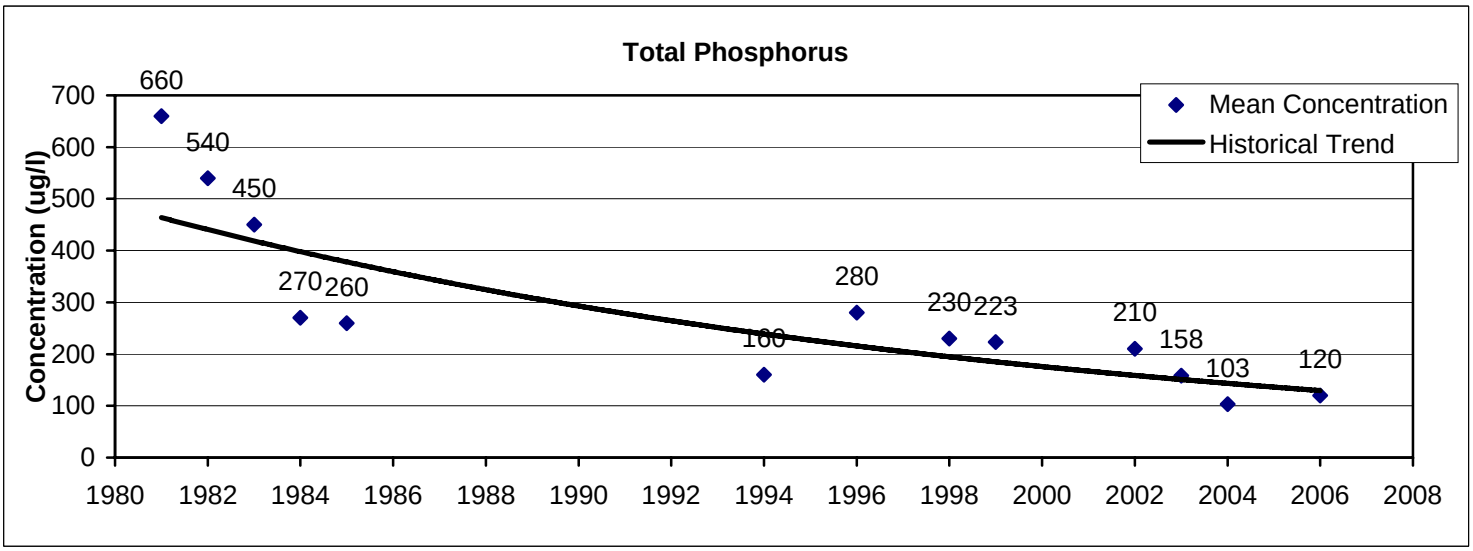


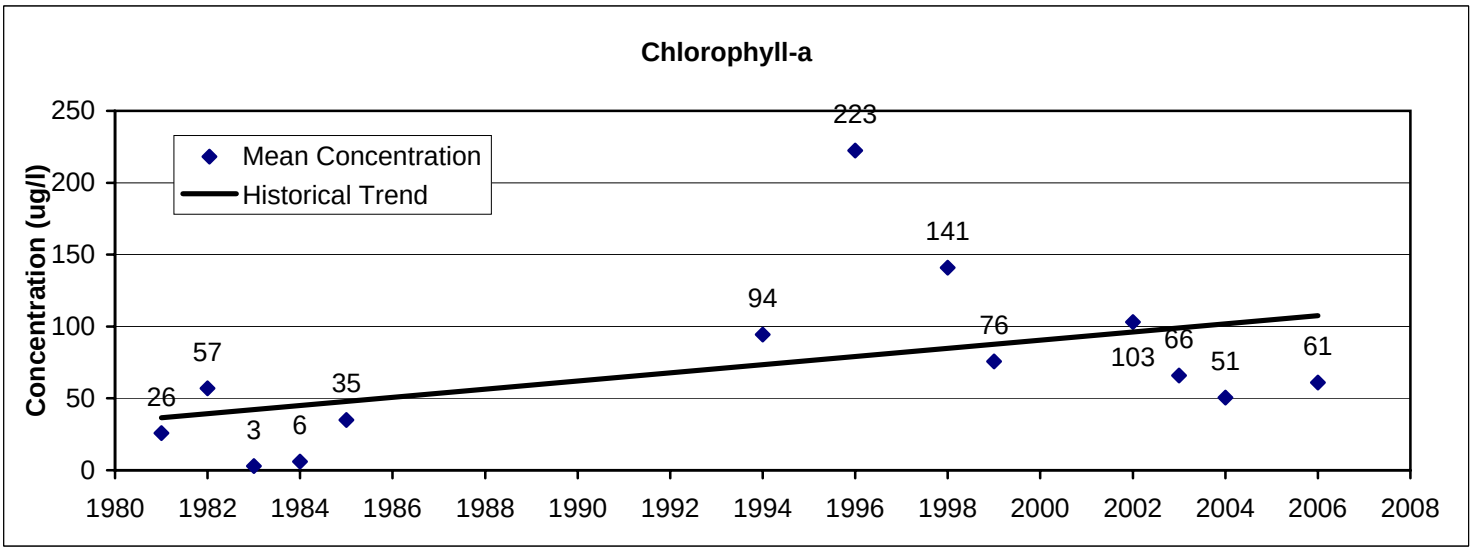
Clearwater River Watershed District	Wenck Associates, Inc. 1800 Pioneer Creek Center Environmental Engineers Maple Plain, MN 55359	Jan 2008
Pleasant Lake Historical Data		Appendix C

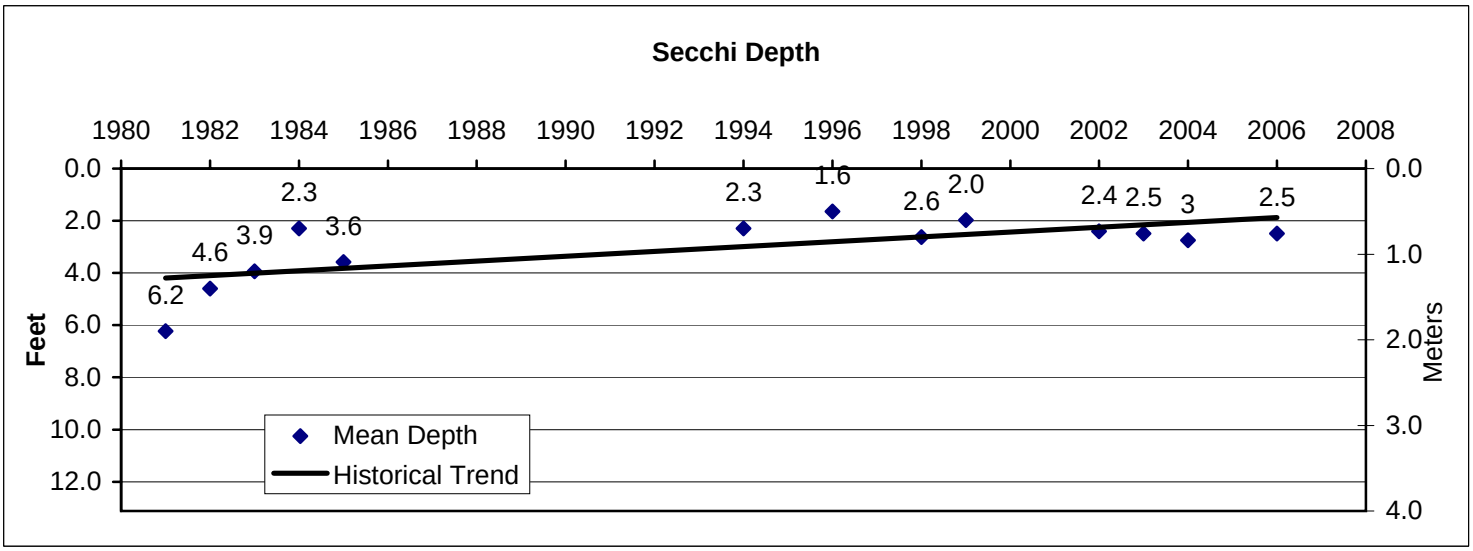

Total Phosphorus
Concentration (ug/l)
700
600
500
400
300
200
100
0
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
Mean Concentration
Historical Trend
35
29
50
21
33

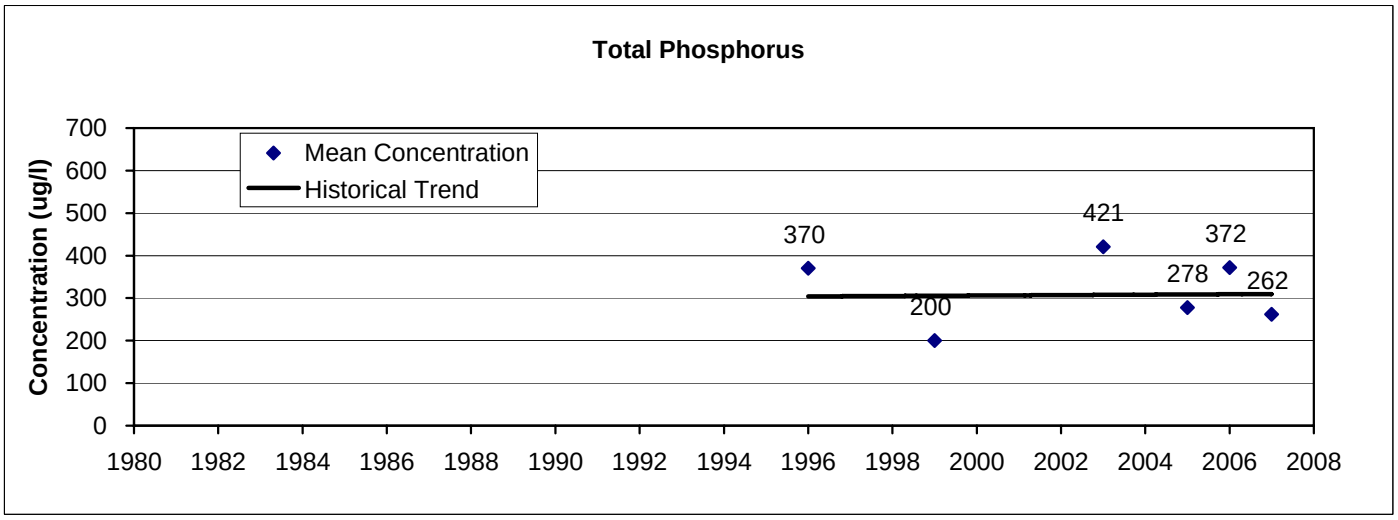

Chlorophyll-a
Concentration (ug/l)
250
200
150
100
50
0
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
Mean Concentration
Historical Trend
14
11
13
3
3

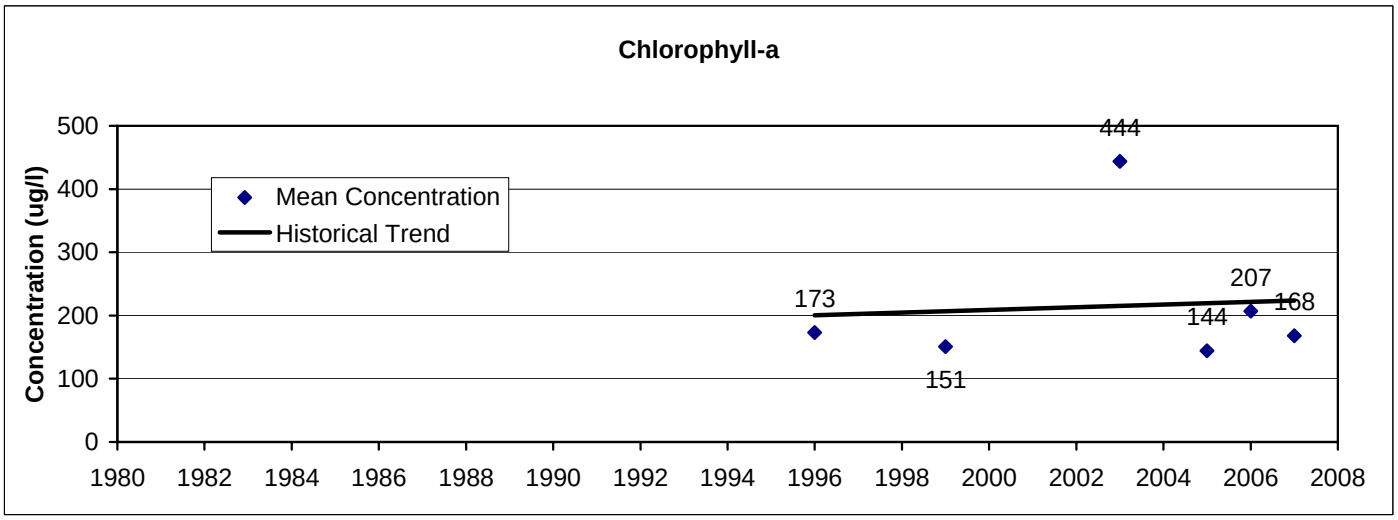

Secchi Depth
1980 1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008
Feet
0
2
4
6
8
10
12
Meters
0.0
1.0
2.0
3.0
4.0
Mean Depth
Linear (Mean Depth)
2.2
1.6
1.0
2.0
2.0

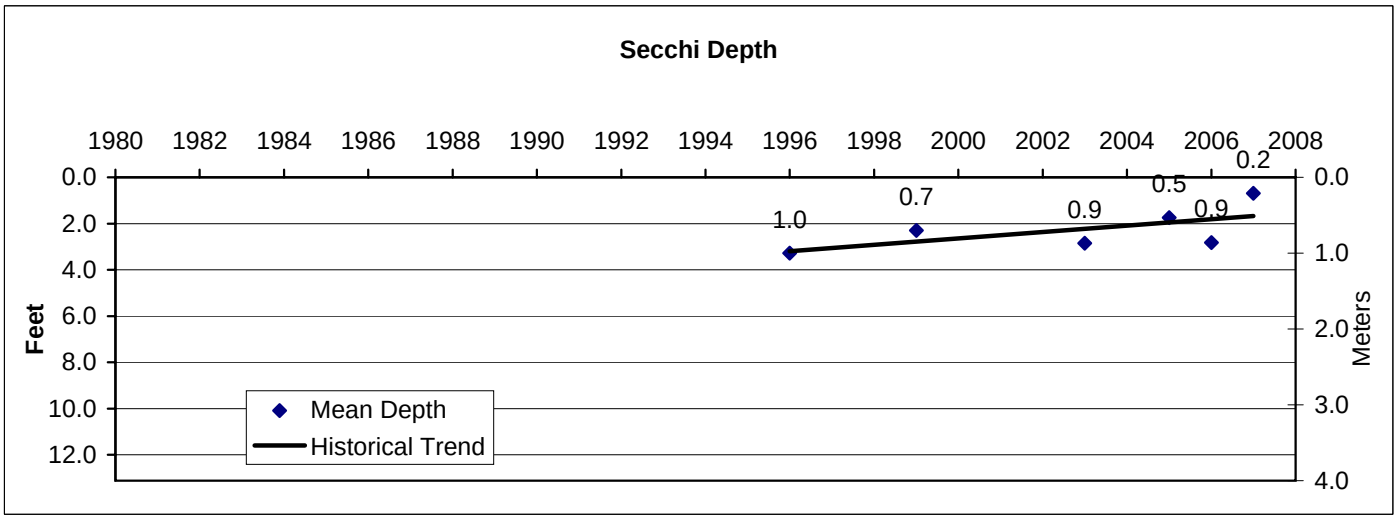

Total Phosphorus
Concentration (ug/l)
Mean Concentration
Historical Trend
660
540
450
270
260
160
280
230
223
210
158
103
120
0
100
200
300
400
500
600
700
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008


Chlorophyll-a
Concentration (ug/l)
Mean Concentration
Historical Trend
26
57
3
6
35
94
223
141
76
103
66
51
61
0
50
100
150
200
250
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008


Secchi Depth
Feet
Meters
Mean Depth
Historical Trend
6.2
4.6
3.9
2.3
3.6
2.3
1.6
2.6
2.0
2.4
2.5
3
2.5
0.0
2.0
4.0
6.0
8.0
10.0
12.0
1.0
2.0
3.0
4.0
1980
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008



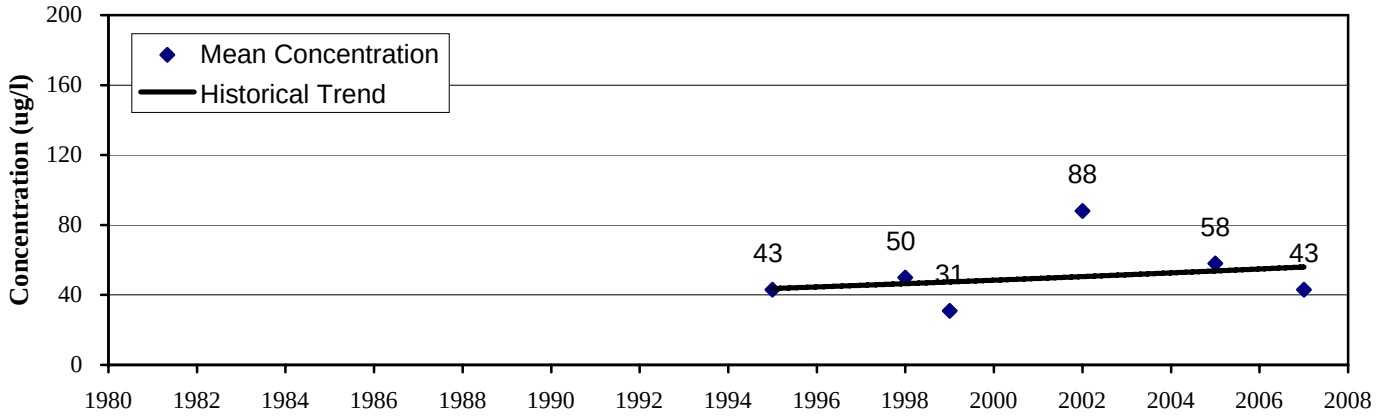




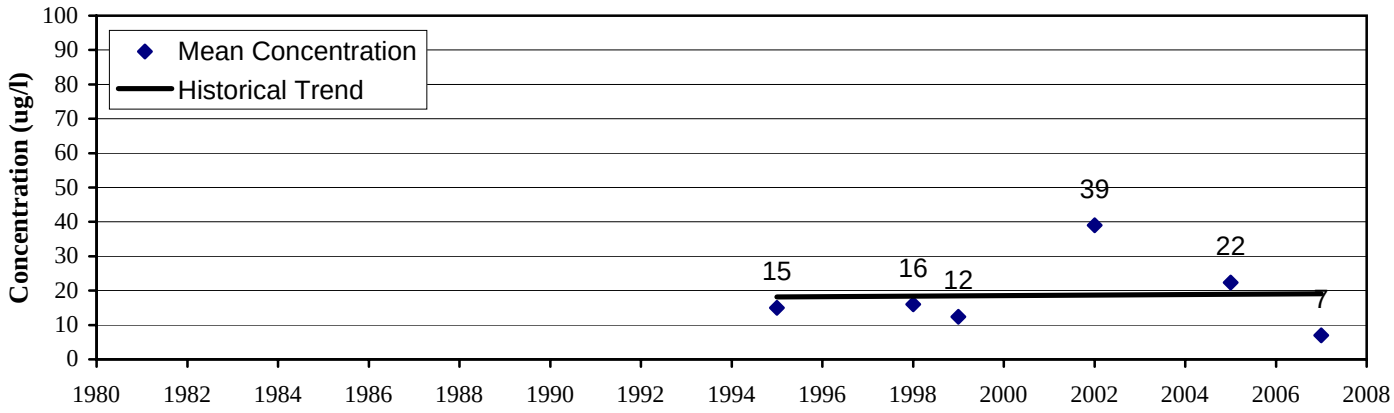
Clearwater River Watershed District	Wenck Associates, Inc. 1800 Pioneer Creek Center Environmental Engineers Maple Plain, MN 55359	Jan 2008
Swartout Lake Historical Data		Appendix C

T:\0002\106\LAKE_WQ_07Swartout

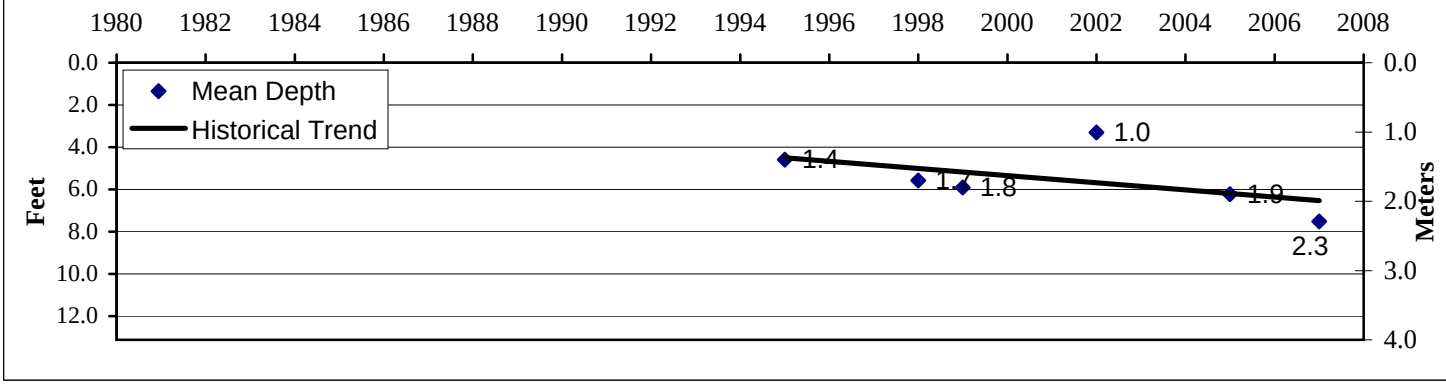
Total Phosphorus



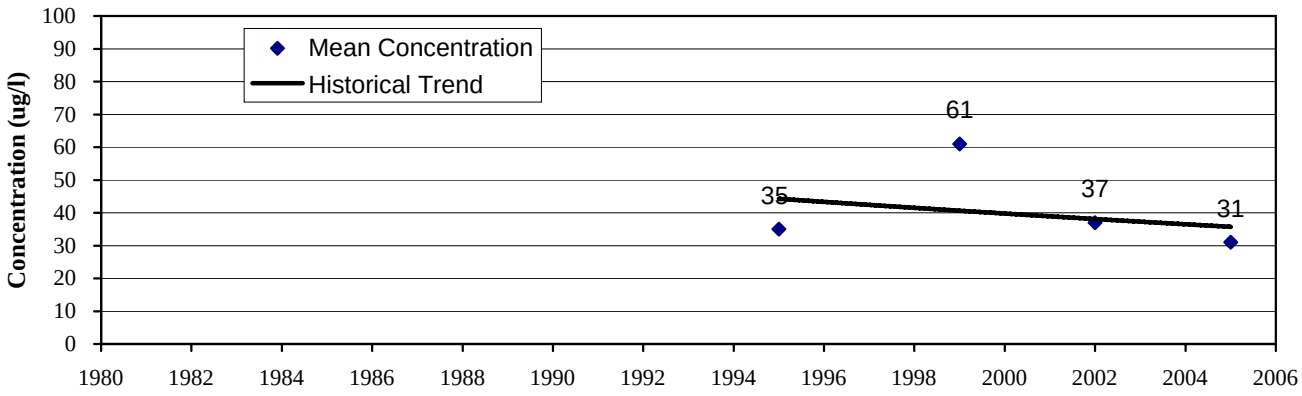
Chlorophyll-*a*



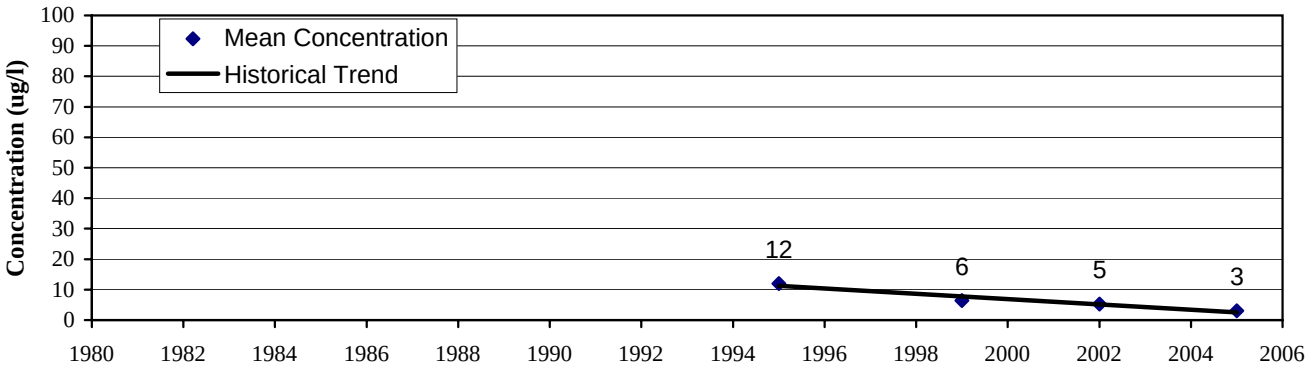
Secchi Depth



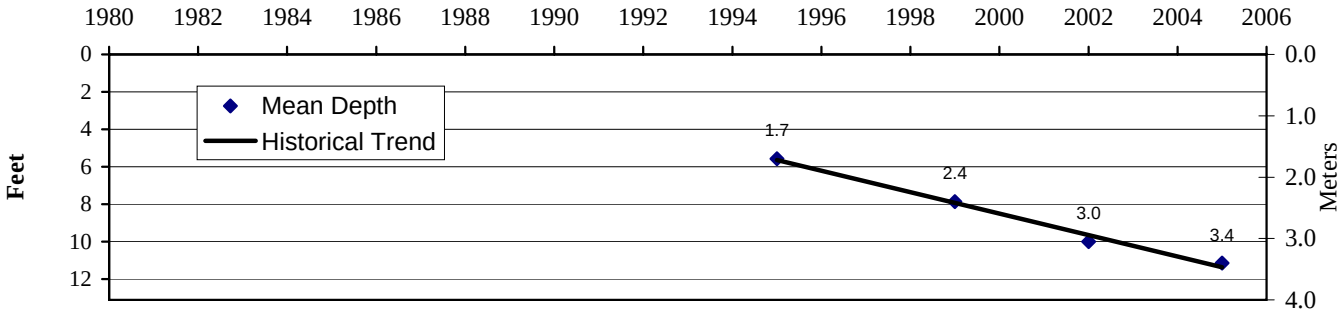
Total Phosphorus



Chlorophyll-*a*



Secchi Depth



Appendix D

Citizen Precipitation Records

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time		County	Township	Range	Section
07	01	7:00	am	47	121	32	03 1
			pm				

Name: Gary Klein

County Name: Meeker

Township Name: Forest Prairie

Address: 310 Meeker Ave S Watkins Mn 55389

Telephone No.: (320) 764-2645

24-HOUR AMOUNTS				REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
	Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)	
01				
02				
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15	.06	.50	.50	
16				
17				
18		Trace	.50	
19				
20	.12	1.50	1.50	
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31		Trace		
TOTALS	1.18	2.00	Trace	

Gauge type (Check One):

cylinder	X	tipping bucket	
test tube		weighing	
wedge		Other	

catch opening diameter/size (inches) _____
maximum catch depth (inches) _____
board/ruler/post used for snow ___yes ___no

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time		County	Township	Range	Section	
07	02	7 00	am	47	121	32	03	1
			pm					

Name: Gary Klein | County Name: Meeker | Township Name: Forest Prairie

Address: 310 Meeker Ave S Watkins MN 55389 | Telephone No.: (320) 764-2645

24-HOUR AMOUNTS				REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
	Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)	
01	.04	.50	.50	
02				
03				
04				
05				
06	.18	3.25	3.50	
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17		Trace	1.00	
18				
19				
20				
21				
22				
23				
24				
25	1.52	12.25	12.25	
26				
27				
28	.23	3.25	11.50	
29				
30				
31				
TOTALS	1.81	19.25	11.50	

Gauge type (Check One): cylinder [X] | tipping bucket [ ] | test tube [ ] | weighing [ ] | wedge [ ] | Other [ ]

catch opening diameter/size (inches) _____
maximum catch depth (inches) _____
board/ruler/post used for snow ___yes ___no

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time		County	Township	Range	Section	
17	03	7 00	am	47	121	32	03	1
			pm					

Name: Gary Klein

County Name: Meeker

Township Name: Forest Prairie

Address: 310 Meeker Ave S Watkins Mn 55389

Telephone No.: (320) 764-2645

24-HOUR AMOUNTS				REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
	Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)	
01				
02	1.94	10.25	21.50	
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21	.02			
22				
23				
24	.23			
25				
26				
27				
28	.19			
29	.72			
30	.26			
31	.19			
TOTALS	3.14	10.25	0	

Gauge type (Check One):

cylinder	X	tipping bucket	
test tube		weighing	
wedge		Other	

catch opening diameter/size (inches) _____
maximum catch depth (inches) _____
board/ruler/post used for snow ___yes ___no

State Climatology Office, 439 Borlaug Hall, University of Minnesota, 1991 Upper Buford Circle, St. Paul, MN 55108-6028

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time		County	Township	Range	Section	
07	04	7 00	am	47	121	32	03	1
			pm					

Name: Gary Klein

County Name: Meeker

Township Name: Forest Prairie

Address: 310 Meeker Ave S Watkins Mn. 55389

Telephone No.: (320) 764-2645

Gauge type *(Check One)*: cylinder [X] tipping bucket [ ] test tube [ ] weighing [ ] wedge [ ] Other [ ]

catch opening diameter/size (inches) ____
maximum catch depth (inches) ____
board/ruler/post used for snow ___yes ___no

24-HOUR AMOUNTS				REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		
.11			01	
			02	
			03	
.28	2.50	2.50	04	
			05	
			06	
			07	
			08	
			09	
.22	1.25	1.25	10	
			11	
			12	
			13	
			14	
			15	
			16	
			17	
			18	
			19	
.38			20	
			21	
1.05			22	
			23	
			24	
			25	
			26	
			27	
			28	
			29	
.03			30	
			31	
2.07	3.75		TOTALS	

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time		County	Township	Range	Section	
07	05	7:00	am	47	471	32	03	1
			pm					

Name: Gary Klein

County Name: Meeker

Township Name: Forest Prairie

Address: 310 Meeker Ave S Watkins MN 55389

Telephone No.: (320) 764-2645

24-HOUR AMOUNTS			REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).	Gauge type *(Check One)*:				catch opening diameter/size (inches) ____ maximum catch depth (inches) ____ board/ruler/post used for snow ___yes ___no
Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		cylinder	X	tipping bucket		
				test tube		weighing		
				wedge		Other		

			01	
			02	
			03	
.08			04	
.16			05	
.06			06	
			07	
			08	
			09	
			10	
			11	
			12	
			13	
			14	
			15	
			16	
			17	
			18	
			19	
			20	
			21	
.14			22	
			23	
.08			24	
			25	
			26	
			27	
			28	
			29	
.52			30	
			31	
1.04			TOTALS	

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time		County	Township	Range	Section
07	06	7 00	am pm	47	121	32	03 1

Name: Gary Klein
County Name: Meeker
Township Name: Forest Prairie
Address: 310 Meeker Ave S Watkins Mn 55389
Telephone No.: (320) 764-2645

24-HOUR AMOUNTS			REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).	Gauge type (Check One):				catch opening diameter/size (inches) ____
Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		cylinder	X	tipping bucket		maximum catch depth (inches) ____
				test tube		weighing		board/ruler/post used for snow ___yes ___no
				wedge		Other		

	Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)	REMARKS
01	.22			
02	.15			
03	.17			
04	.11			
05				
06				
07				
08				
09	.06			
10	.08			
11				
12				
13				
14				
15	.22			
16	.19			
17				
18	.61			
19				
20	.12			
21	.06			
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
TOTALS	1.96			

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time	County	Township	Range	Section
07	07	7:00 am / pm	47	121	32	03 1

Name: Gary Klein
County Name: Meeker
Township Name: Forest Prairie
Address: 310 Meeker Ave S Watkins Mn 55389
Telephone No.: (320) 264-2645

24-HOUR AMOUNTS				REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
	Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)	
01				
02	.21			
03	2.55			
04	.06			
05				
06				
07				
08	.22			
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				
26	.19			
27				
28				
29				
30				
31				
TOTALS	3.23			

Gauge type (Check One):

cylinder	X	tipping bucket	
test tube		weighing	
wedge		Other	

catch opening diameter/size (inches) _____
maximum catch depth (inches) _____
board/ruler/post used for snow ___yes ___no

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time		County	Township	Range	Section	
07	08	7 00	am / pm	47	121	32	03	1

Name: Gary Klein | County Name: Meeker | Township Name: Forest Prairie

Address: 310 Meeker Ave S Watkins Mn 55389 | Telephone No.: (320) 764-2645

Gauge type (Check One): cylinder [X] | tipping bucket | test tube | weighing | wedge | Other

catch opening diameter/size (inches) ____
maximum catch depth (inches) ____
board/ruler/post used for snow ___yes ___no

24-HOUR AMOUNTS: Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
			01	
			02	
			03	
.03			04	
			05	
			06	
			07	
			08	
			09	
2.05			10	
			11	
			12	
.23			13	
			14	
			15	
			16	
			17	
.58			18	
.11			19	
1.24			20	
			21	
			22	
.31			23	
			24	
			25	
			26	
.10			27	
			28	
			29	
			30	
			31	
4.65			TOTALS	

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time		County	Township	Range	Section
07	09	7 00	am pm	47	121	32	03	1

Name: Gary Klein
County Name: Meeker
Township Name: Forest Prairie
Address: 310 Meeker Aves Watkins Mn. 55389
Telephone No.: (320) 764-2645

24-HOUR AMOUNTS				REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		
			01	
			02	
			03	
			04	
			05	
.34			06	
			07	
.15			08	
			09	
			10	
			11	
			12	
.16			13	
			14	
			15	
			16	
.88			17	
.26			18	
			19	
.78			20	
.11			21	
			22	
			23	
.38			24	
			25	
.05			26	
			27	
			28	
			29	
.12			30	
			31	
3.23			TOTALS	

Gauge type (Check One): cylinder [X] | tipping bucket [ ] | test tube [ ] | weighing [ ] | wedge [ ] | Other [ ]

catch opening diameter/size (inches) _____
maximum catch depth (inches) _____
board/ruler/post used for snow ___yes ___no

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time		County	Township	Range	Section	
07	10	20	am / pm	47	121	32	03	1

Name: Gary Klein
County Name: Meeker
Township Name: Forest Prairie
Address: 310 Meeker Ave S Watkins Mn 55389
Telephone No.: (320) 764-2645

24-HOUR AMOUNTS				REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
	Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)	
01				
02	.24			
03				
04	.75			
05	.12			
06	.03			
07	.97			
08	.07			
09				
10				
11				
12				
13				
14	.05			
15	.34			
16	.11			
17	.20			
18	.83			
19	.05			
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				
31				
TOTALS	3.28			

Gauge type (Check One):

cylinder	X	tipping bucket	
test tube		weighing	
wedge		Other	

catch opening diameter/size (inches) _____
maximum catch depth (inches) _____
board/ruler/post used for snow ___yes ___no

State Climatology Office, 439 Borlaug Hall, University of Minnesota, 1991 Upper Buford Circle, St. Paul, MN 55108-6028

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time		County	Township	Range	Section	
07	11	2 00	am	47	121	32	03	1
			pm					

Name: Gary Klein
County Name: Meeker
Township Name: Forest Prairie
Address: 310 Meeker Aves Watkins Mn 55389
Telephone No.: (320) 764-2645

Gauge type *(Check One)*: cylinder X; tipping bucket; test tube; weighing; wedge; Other

catch opening diameter/size (inches) ____
maximum catch depth (inches) ____
board/ruler/post used for snow ___yes ___no

24-HOUR AMOUNTS: Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
			01	
			02	
			03	
			04	
			05	
			06	
			07	
			08	
			09	
			10	
			11	
			12	
			13	
			14	
			15	
			16	
			17	
			18	
			19	
			20	
			21	
			22	
	Trace	.0	23	
			24	
			25	
			26	
			27	
			28	
			29	
			30	
			31	
.00	Trace	.0	TOTALS	

RLK

NA-02732-07

MINNESOTA CLIMATOLOGICAL NETWORK

Minnesota Department of Natural Resources
Division of Forestry

Year	Month	Ob Time	County	Township	Range	Section
07	01	am / ✓pm	86	206	28	20

Name: Viola Novotne
County Name: Wright
Township Name: Corinna
Address: 9214 Kilbury Ave NW
Telephone No.: (320) 274-5179

Gauge type (Check One): cylinder ✓ | tipping bucket | test tube | weighing | wedge | Other

catch opening diameter/size (inches) ____
maximum catch depth (inches) ____
board/ruler/post used for snow ✓yes ___no

24-HOUR AMOUNTS: Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
.27	2.5	2.5	01	
			02	
			03	
			04	
			05	
			06	
			07	
			08	
			09	
			10	
			11	
			12	
			13	
			14	
.54	1.	1.	15	
			16	
			17	
			18	
			19	
			20	
.06	1.	1	21	
			22	
			23	
			24	
			25	
			26	
			27	
.02	.3	1	28	
			29	
			30	
			31	
			TOTALS	

NA-02732-07

MINNESOTA CLIMATOLOGICAL NETWORK

Minnesota Department of Natural Resources
Division of Forestry

Year	Month	Ob Time	County	Township	Range	Section
07	02	am / pm ✓	86	206	28	201

Observer Name	County Name	Township Name
VIOLA NOVOTNE	WRIGHT	CORINNA

Address: 9214 KILBURY AVE NW

Telephone No.: (320) 2745179

24-HOUR AMOUNTS				REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
	Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)	
01	.03	.5	.5	
02				
03				
04				
05				
06	.10	2.	2.5	
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25	.50	11	11	
26	.06	.04	1(	RAIN + SNOW MIX
27				
28				
29				
30				
31		.5	11.5	
TOTALS				

Gauge type (Check One): cylinder ✓ | tipping bucket | test tube | weighing | wedge | Other

catch opening diameter/size (inches) _____
maximum catch depth (inches) _____
board/ruler/post used for snow ✓ yes ___ no

State Climatology Office, 439 Borlaug Hall, University of Minnesota, 1991 Upper Buford Circle, St. Paul, MN 55108-6028

NA-02732-07

RLK

MINNESOTA CLIMATOLOGICAL NETWORK

Minnesota Department of Natural Resources
Division of Forestry

Year	Month	Ob Time	County	Township	Range	Section
07	03	am / ✓pm	86	206	28	20

1

Name: VICLA NOVOTNE

County Name: WRIGHT

Township Name: CORINNA

Address: 9214 KILBURY AVE NW;

Telephone No.: (320) 274 5179

24-HOUR AMOUNTS				REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
	Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)	
01				
02	1.1	12.	23	
03				
04				
05				
06				
07				
08				
09				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25	.20	-	-	
26				
27				
28	.10			
29				
30	.89			
31	.00			
TOTALS				

Gauge type (Check One):

cylinder	✓	tipping bucket	
test tube		weighing	
wedge		Other	

catch opening diameter/size (inches) ____
maximum catch depth (inches) ____
board/ruler/post used for snow ✓ yes ___ no

NA-02732-07

MINNESOTA CLIMATOLOGICAL NETWORK

Minnesota Department of Natural Resources
Division of Forestry

Year	Month	Ob Time	County	Township	Range	Section
07	04	am / pm ✓	86	206	28	20 1

Name	County Name	Township Name
VICLA NOVOTNE	WRIGHT	CORINNA

Address	Telephone No.
9214 KILBURY AVE NW.	(320) 274-5179

24-HOUR AMOUNTS				REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
	Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)	
01	.36			
02				
03				
04	.21	1.	1.	SNOW RAIN MIX
05				
06				
07				
08				
09				
10	.12	2	2	
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21	.40	—	—	
22	M			
23	.28			
24				
25				
26				
27				
28				
29				
30				
31				
TOTALS				

Gauge type *(Check One)*: cylinder ✓ tipping bucket; test tube — weighing; wedge — Other

catch opening diameter/size (inches) ____
maximum catch depth (inches) ____
board/ruler/post used for snow ✓ yes ___ no

State Climatology Office, 439 Borlaug Hall, University of Minnesota, 1991 Upper Buford Circle, St. Paul, MN 55108-6028

NA-02732-07

R&C

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time	County	Township	Range	Section
07	05	am / pm ✓	86	206	28	20 1

Name: NICLA NOVOTNE

County Name: WRIGHT

Township Name: CORINNA

Address: 9214 KILBURY AVE NW.

Telephone No.: (320) 274-5179

Gauge type *(Check One)*: cylinder ✓ | tipping bucket | test tube | weighing | wedge | Other

catch opening diameter/size (inches) ____
maximum catch depth (inches) ____
board/ruler/post used for snow ✓ yes ___ no

24-HOUR AMOUNTS: Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
			01	
			02	
			03	
			04	
.30			05	
			06	
.05			07	
			08	
			09	
			10	
			11	
			12	
			13	
			14	
.10			15	
			16	
			17	
			18	
			19	
			20	
			21	
			22	
.10			23	
.10			24	
.32			25	
			26	
			27	
.05			28	
.85			29	
.70			30	
			31	
2.77			TOTALS	

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time	County	Township	Range	Section
07	06	✓ pm	86	206	28	20

1

.me VICLA NOVOTNE

County Name WRIGHT

Township Name CORINNA

Address 9214 KILBURY AVE NW.

Telephone No. (320) 274 5179

24-HOUR AMOUNTS			REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).	Gauge type (Check One):				catch opening diameter/size (inches) ____
Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		cylinder	✓	tipping bucket		maximum catch depth (inches) ____
				test tube		weighing		board/ruler/post used for snow ✓ yes ___ no
				wedge		Other		

			01	
.41			02	
.10			03	
.57			04	
			05	
			06	
			07	
			08	
			09	
			10	
			11	
			12	
			13	
			14	
			15	
.54			16	
.06			17	
.17			18	
.35			19	
.09			20	
			21	
			22	
			23	
			24	
			25	
			26	
			27	
			28	
			29	
			30	
			31	
			TOTALS	

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NA-02732-07

MINNESOTA CLIMATOLOGICAL NETWORK

Minnesota Department of Natural Resources
Division of Forestry

Year	Month	Ob Time	County	Township	Range	Section	
07	07	☑ pm	86	206	28	20	1

Name	County Name	Township Name
NICLA NOVOTNE	WRIGHT	CORINNA

Address	Telephone No.
9214 KILBURY AVE NW.	(320) 274-5179

Gauge type *(Check One)*: cylinder ☑ | tipping bucket | test tube | weighing | wedge | Other

catch opening diameter/size (inches) ____
maximum catch depth (inches) ____
board/ruler/post used for snow ☑ yes ___ no

24-HOUR AMOUNTS				REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		
			01	
			02	
.70			03	
.30			04	
			05	
			06	
			07	
.44			08	
			09	
			10	
			11	
			12	
			13	
			14	
			15	
.15			16	
			17	
			18	
			19	
			20	
			21	
			22	
			23	
			24	
			25	
			26	
			27	
.25			28	
			29	
			30	
			31	
			TOTALS	

NA-02732-07

MINNESOTA CLIMATOLOGICAL NETWORK

Minnesota Department of Natural Resources
Division of Forestry

Year	Month	Ob Time	County	Township	Range	Section
07	08	am / pm ✓	86	206	28	20

1

Name: VICLA NOVOTNE

County Name: WRIGHT

Township Name: CORINNA

Address: 9214 KILBURY AVE NW.

Telephone No.: (320) 274-5179

Gauge type (Check One): cylinder ✓ tipping bucket; test tube; weighing; wedge; Other

catch opening diameter/size (inches) ____
maximum catch depth (inches) ____
board/ruler/post used for snow ✓ yes ___ no

24-HOUR AMOUNTS: Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
			01	
			02	
			03	
.30			04	
			05	
			06	
			07	
			08	
			09	
			10	
1.26			11	
			12	
			13	
1.47			14	
			15	
			16	
			17	
			18	
.55			19	
.20			20	
1.04			21	
			22	
			23	
			24	
			25	
			26	
.05			27	
			28	
.10			29	
			30	
			31	
5.07			TOTALS	

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time	County	Township	Range	Section
07	09	☐ am ☑ pm	86	206	28	20 1

Name: VICLA NOVOTNE

County Name: WRIGHT

Township Name: CORINNA

Address: 9214 KILBURY AVE NW.

Telephone No.: (320) 274-5179

24-HOUR AMOUNTS			REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)	
			01
			02
			03
			04
			05
			06
.68			07
			08
			09
			10
			11
.09			12
			13
			14
			15
			16
2.35			17
.44			18
			19
			20
.96			21
			22
			23
.28			24
			25
			26
.05			27
			28
			29
35			30
			31
			TOTALS

Gauge type (Check One):

cylinder	✓	tipping bucket	
test tube		weighing	
wedge		Other	

catch opening diameter/size (inches) _____
maximum catch depth (inches) _____
board/ruler/post used for snow ✓ yes ___ no

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NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time	County	Township	Range	Section
07	10	☐ am ☑ pm	86	206	28	20 1

Name: VICLA NOVOTNE

County Name: WRIGHT

Township Name: CORINNA

Address: 9214 KILBURY AVE NW.

Telephone No.: (320) 274-5179

Gauge type (Check One): cylinder ☑ tipping bucket ☐ test tube ☐ weighing ☐ wedge ☐ Other

catch opening diameter/size (inches) _____
maximum catch depth (inches) _____
board/ruler/post used for snow ☑ yes ☐ no

24-HOUR AMOUNTS: Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).
			01	
.28			02	
.05			03	
			04	
1.75			05	
.03			06	
			07	
1.28			08	
.03			09	
			10	
			11	
			12	
			13	
			14	
			15	
.37			16	
			17	
			18	
1.00			19	
			20	
			21	
			22	
			23	
			24	
			25	
			26	
			27	
			28	
			29	
			30	
			31	
4.79			TOTALS	

NA-02732-07

Minnesota Department of Natural Resources
Division of Forestry

MINNESOTA CLIMATOLOGICAL NETWORK

Year	Month	Ob Time	County	Township	Range	Section	
07	11	___ am / V pm	86	206	28	20	1

Name: VICLA NOVOTNE | County Name: WRIGHT | Township Name: CORINNA

Address: 9214 KILBURY AVE NW. | Telephone No.: (320) 274-5179

24-HOUR AMOUNTS			REMARKS: Give times and comments about events. (Temperature and Phenology items are very useful).	Gauge type (Check One):				catch opening diameter/size (inches) ____
Rain, Melted Snow, Etc. (Ins. & Hdths)	Snow (Ins. & Tenths)	Snow On Ground (Inches)		cylinder	✓	tipping bucket		maximum catch depth (inches) ____
				test tube		weighing		board/ruler/post used for snow ✓ yes ___ no
				wedge		Other		

			01	
			02	
			03	
			04	
			05	
			06	
			07	
			08	
			09	
			10	
			11	
			12	
			13	
			14	
			15	
			16	
			17	
			18	
.02			19	SNOW FLURRIES DIMINISHED
			20	
			21	
			22	
			23	
			24	
			25	
			26	
			27	
			28	
			29	
			30	
			31	
			TOTALS	

State Climatology Office, 439 Borlaug Hall, University of Minnesota, 1991 Upper Buford Circle, St. Paul, MN 55108-6028

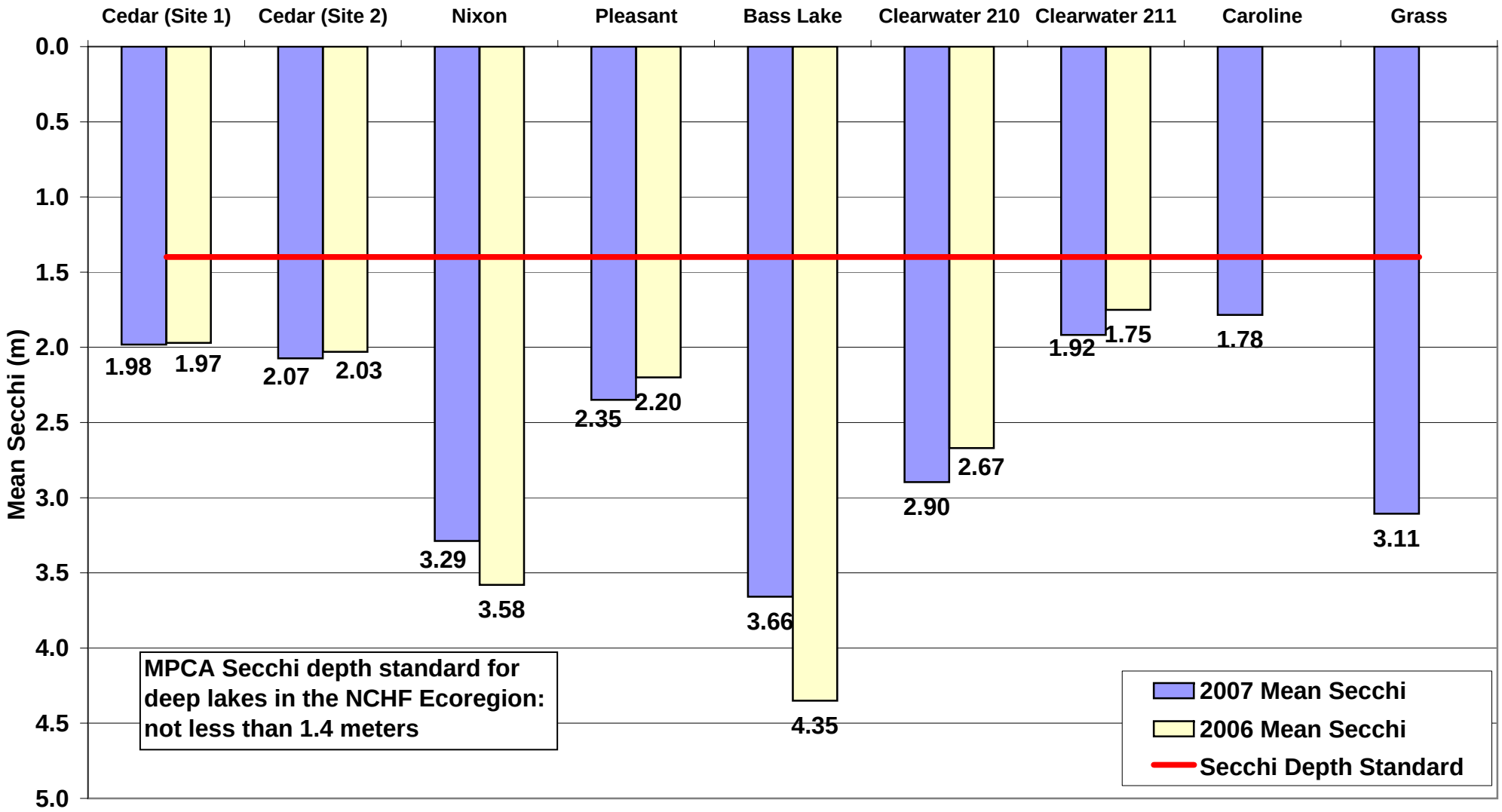
Appendix E

Secchi Data from Citizen's Lake Monitoring Program

APPENDIX E

Secchi Data from Citizen's Lake Monitroing Program

Clearwater River Watershed District
2007 Annual Report



t:/0002/106/secchi_07

Wenck Associates, Inc.

MPCA Citizen Lake-Monitoring Program 2007 Secchi Data Sheet

Lake # _____

Site # _____
Office Use Do not write in this space.

Your Name: Dan Ross

Address: 10151 120th Street NW
South Haven, MN

- Use a separate data sheet for EACH site.
- If disk is on lake bottom, mark B next to Secchi.
- PC = Physical Condition; RC = Recreational Suitability
- Record carefully: 6 ft & 9 in is 6.75 ft - NOT 6.9 ft.
- For NEW sites, send in your marked lake map.

Lake Name: Bass County: Wright

Location of Lake: 6 miles N of Annandale.

Phone: (___)-___-___ = summer; (___)-___-___ = winter.

Is this the same sampling site YOU monitored last year? Yes Lake depth at sampling site: 33 ft.

Line #	2007 Date	Time	Secchi (nearest 1/2 ft)	*B	PC (1 5)	RS (1 5)	Color of Water	Other Notes
Ex.	5/20	10:15 (a.m.) p.m.	5.5 ft		2	3	Green	Breezy, Temp: 70 F
1	5/26	10:30 (a.m.) p.m.	12.0 ft		2	2	GRN	POLLEN
2	6/16	1:30 a.m. (p.m.)	13.5 ft		2	1	GRN	LOTS OF POLLEN
3	6/23	2:00 a.m. (p.m.)	13.5 ft		1	1	GRN	Breezy
4	7/1	2:00 a.m. (p.m.)	13.5 ft		1	1	GRN	Breezy
5	7/8	3:00 a.m. (p.m.)	11.5 ft		2	1	GRN	—
6	7/15	10:30 a.m. (p.m.)	11.5 ft		2	1	GRN	Slight Breeze
7	7/22	12:30 a.m. (p.m.)	11.5 ft		2	1	GRN	Windy
8	7/28	1:00 a.m. (p.m.)	12.0 ft		2	1	GRN	Sunny - slight breeze
9	8/3	1:30 a.m. (p.m.)	12.5 ft		2	1	GRN	Sunny calm
10	8/17	12:30 a.m. (p.m.)	12.5 ft		2	1	GRN	Partly cloudy
11	9/2	2:15 a.m. (p.m.)	12.0 ft		2	1	GRN	Slight breeze
12	9/22	11:30 (a.m.) p.m.	8.0 ft		2	2	BROWN	Turbid Water
13		a.m. p.m.	ft					
14		a.m. p.m.	ft					
15		a.m. p.m.	ft					
16		a.m. p.m.	ft					
17		a.m. p.m.	ft					
18		a.m. p.m.	ft					
19		a.m. p.m.	ft					
20		a.m. p.m.	ft					
21		a.m. p.m.	ft					
22		a.m. p.m.	ft					
23		a.m. p.m.	ft					
24		a.m. p.m.	ft					
25		a.m. p.m.	ft					

At the end of your sampling season, please return the top page of this form by November 10, 2007

Minnesota Pollution Control Agency

MPCA Citizen Lake-Monitoring Program 2007 Secchi Data Sheet

Lake #_____

Site #_____

Office Use Do not write in this space

CLMP6316
Dave Faidley
4187 Bridgewater Rd
South Haven, MN 55382

86-0281

- Use a separate data sheet for EACH site.
- If disk is on lake bottom, mark B next to Secchi.
- PC = Physical Condition; RC = Recreational Suitability
- Record carefully: 6 ft & 9 in is 6.75 ft - NOT 6.9 ft.
- For NEW sites, send in your marked lake map.

Lake Name: Caroline **County:** Stearns / Wright

Location of Lake:_____ miles_____ of_____.

Phone: (320)-236-3004 = summer; (____)-Same = winter.

Is this the same sampling site YOU monitored last year?_____ **Lake depth at sampling site:**_____ ft.

Line #	2007 Date	Time	Secchi (nearest 1/2 ft)	*B	PC (1 5)	RS (1 5)	Color of Water	Other Notes
Ex.	5/20	10:15 (a.m.) p.m.	5.5 ft		2	3	Green	Breezy, Temp: 70 F
1	4/26	5:00 a.m. (p.m.)	~~14.0~~ ft		2	2-3	clear/	clear day, Calm
2		a.m. p.m.	12.0 ft				↓	
3	5/12	4:00 a.m. (p.m.)	10.0 ft		2	2	↓	clear, Calm
4		a.m. p.m.	ft					
5	5/24	3:30 a.m. (p.m.)	8.5 ft		2	2-3	clear/green	Calm
6		a.m. p.m.	ft					
7	6/11	2:00 a.m. (p.m.)	5.5 ft		3	2-3	brownish-green	Calm
8		a.m. p.m.	ft					
9	6/21	4:00 a.m. (p.m.)	4.0 ft		3	2-3	" "	"
10		a.m. p.m.	ft			2		
11	7/8	4:00 a.m. (p.m.)	3.5 ft		3	4	" "	Sunny, muggy
12		a.m. p.m.	ft					weeds harvesting up
13	8/8	3:00 a.m. (p.m.)	3.0 ft		3	4	" "	Calm
14		a.m. p.m.	ft					
15	9/3	4:00 a.m. (p.m.)	2.5 ft		3	4	" "	Calm, Sunny
16		a.m. p.m.	ft					
17	9/17	4:00 a.m. p.m.	3.5 ft		3	3	" "	Calm, Sunny
18		a.m. p.m.	ft					
19		a.m. p.m.	ft					
20	9/28	4:00 a.m. (p.m.)	6.0 ft		3	3	" "	
21		a.m. p.m.	ft				improving	
22		a.m. p.m.	ft					
23	Note	— Due to hot temps & drought we had very little inflow						
24		a.m. p.m.	ft from Clearwater River this summer & little rain.					
25		a.m. p.m.	All current water clarity to be "the worst" ever					

At the end of your sampling season, please return the top page of this form by November 10, 2007

Minnesota Pollution Control Agency

MPCA Citizen Lake-Monitoring Program 2007 Secchi Data Sheet

Lake # 86-0227
Site # 203
Office Use. Do not write in this space.

Your Name: Robert B Johnson

Address: Box 755
Annandale, Mn.
55302

- Use a separate data sheet for EACH site.
- If disk is on lake bottom, mark B next to Secchi.
- PC = Physical Condition; RC = Recreational Suitability
- Record carefully: 6 ft & 9 in is 6.75 ft - NOT 6.9 ft.
- For NEW sites, send in your marked lake map.

Lake Name: Cedar County: Wright
Location of Lake: 3 miles N.E. of Annandale.
Phone: (320)- 274-8356 = summer; (520)- 625-5567 = winter.
Is this the same sampling site YOU monitored last year? yes Lake depth at sampling site: 20 ft.

Line #	2007 Date	Time	Secchi (nearest 1/2 ft)	*B	PC (1 5)	RS (1 5)	Color of Water	Other Notes
Ex.	5/20	10:15 (a.m.) p.m.	5.5 ft		2	3	Green	Breezy, Temp: 70 F
1	5/10	1:30 a.m. p.m.	17.0 ft		2	2	Clear	Sunny Calm Cool
2	5/31	1:20 a.m. p.m.	7.5 ft		2	2	Lt. green	" Slight Breeze
3	6/26	1:15 a.m. p.m.	3.0 ft		3	3	green	" "
4	7/12	1:20 a.m. p.m.	4.0 ft		3	3	"	" "
5	8/6	2:00 a.m. p.m.	4.0 ft		3	3	"	Slight overcast calm
6	8/10	12:00 a.m. p.m.	3.0 ft		3	3	"	Sunny calm
7	8/24	1:20 a.m. p.m.	5.0 ft		3	3	"	" "
8	9/9	12:10 a.m. p.m.	3.5 ft		2	2	Lt. green	" Slt. Breeze
9	9/29	12:15 a.m. p.m.	8.0 ft		2	2	"	" "
10	10/8	12:15 a.m. p.m.	8.0 ft		2	2	"	Slt Breeze, overcast
11		a.m. p.m.	ft					
12		a.m. p.m.	ft					
13		a.m. p.m.	ft					
14		a.m. p.m.	ft					
15		a.m. p.m.	ft					
16		a.m. p.m.	ft					
17		a.m. p.m.	ft					
18		a.m. p.m.	ft					
19		a.m. p.m.	ft					
20		a.m. p.m.	ft					
21		a.m. p.m.	ft					
22		a.m. p.m.	ft					
23		a.m. p.m.	ft					
24		a.m. p.m.	ft					
25		a.m. p.m.	ft					

At the end of your sampling season, please return the top page of this form by November 10, 2007

Minnesota Pollution Control Agency

MPCA Citizen Lake Monitoring Program 2007 Secchi Data Sheet

Lake # 86-0227
Site # 202
Office use - Do not write in this space.

CLMP3615
Robert B. Johnson
Box 755
Annandale, MN 55302

86-0227

- Use a separate data sheet for EACH site.
- If disk is on lake bottom, mark B next to Secchi.
- PC = Physical Condition; RC = Recreational Suitability
- Record carefully: 6 ft & 9 in is 6.75 ft - NOT 6.9 ft.
- For NEW sites, send in your marked lake map.

Lake Name: CEDAR **County:** Wright
Location of Lake: 3 miles N.E of ANNANDALE.
Phone: (320)-274-8356 = summer; (320)-625-5867 = winter.
Is this the same sampling site YOU monitored last year? Yes **Lake depth at sampling site:** 30 ft.

Line #	2007 Date	Time	Secchi (nearest 1/2 ft)	*B	PC (1 5)	RS (1 5)	Color of Water	Other Notes
Ex.	5/20	10:15 a.m. p.m.	5.5 ft		2	3	Green	Breezy, Temp. 70 F.
1	5/10	1:40 p.m.	18.0 ft		2	2	CLEAR	Sunny, Calm, Cool
2	5/31	1:30 p.m.	8.0 ft		2	2	lt. green	" Slight Breeze
3	6/26	1:30 p.m.	3.0 ft		3	3	green	" "
4	7/12	1:30 p.m.	4.0 ft		3	3	"	" "
5	8/6	2:10 p.m.	4.0 ft		3	3	"	Slight overcast -
6	8/10	12:00 p.m.	3.5 ft		3	3	"	Sunny, Calm
7	8/24	1:15 p.m.	5.0 ft		3	3	"	" "
8	9/7	12:00 p.m.	6.0 ft		2	2	lt. green	" Slight Breeze
9	9/27	12:00 p.m.	8½ ft		2	2	"	" "
10	10/8	12:00 p.m.	8.0 ft		2	2	"	Slt Breeze + overcast
11		a.m. p.m.	ft					
12		a.m. p.m.	ft					
13		a.m. p.m.	ft					
14		a.m. p.m.	ft					
15		a.m. p.m.	ft					
16		a.m. p.m.	ft					
17		a.m. p.m.	ft					
18		a.m. p.m.	ft					
19		a.m. p.m.	ft					
20		a.m. p.m.	ft					
21		a.m. p.m.	ft					
22		a.m. p.m.	ft					
23		a.m. p.m.	ft					
24		a.m. p.m.	ft					
25		a.m. p.m.	ft					

At the end of your sampling season, please return the top page of this form by November 10, 2007

Minnesota Pollution Control Agency

MPCA Citizen Lake-Monitoring Program 2007 Secchi Data Sheet

Lake # 86-0252

Site # 210

Office Use Do not write in this space.

CLMP4571
Delores Roeder
463 Beachwood Rd
South Haven, MN 55382-9294

86-0252

- Use a separate data sheet for EACH site.
- If disk is on lake bottom, mark B next to Secchi.
- PC = Physical Condition; RC = Recreational Suitabili
- Record carefully: 6 ft & 9 in is 6.75 ft - NOT 6.9 ft.
- For NEW sites, send in your marked lake map.

Lake Name: Clearwater County: Wright
Location of Lake: 3 miles North of Annandale
Phone: (320)-274-7272 = summer; (___)-___-___ = winter.
Is this the same sampling site YOU monitored last year? yes Lake depth at sampling site: 20 ft.

Line #	2007 Date	Time	Secchi (nearest 1/2 ft)	*B	PC (1 5)	RS (1 5)	Color of Water	Other Notes
Ex.	5/20	10:15 a.m. p.m.	5.5 ft		2	3	Green	Breezy, Temp: 70 F
1	6/7	1:00 a.m. p.m.	12.0 ft		2	2	Tan	Cloudy - Breezy 1.25 rain last night
2	6/12	11:30 a.m. p.m.	7.5 ft		3	3	Greenish	Partly cloudy - Lrg
3	6/21	2:30 a.m. p.m.	9.5 ft		2	2	Tan/green	cloudy
4	6/29	11:15 a.m. p.m.	9.5 ft		2	2	Tan/green	sunny - Lite B
5	7/5	10:15 a.m. p.m.	7.5 ft		2	2	" "	" "
6	7/12	11:15 a.m. p.m.	8.5 ft		2	2	" "	Partly cloudy, Windy
7	7/17	10:00 a.m. p.m.	10.5 ft		2	2	" "	Hazy sun - cool
8	7/28	11:15 a.m. p.m.	10.5 ft		3	3	dk Tan/green	Mostly sun - Calm
9	8/6	12:45 a.m. p.m.	9.5 ft		2	2	"	hazy - lightning
10	8/13	11:15 a.m. p.m.	10.0 ft		2	2	"	Hazy - cloudy
11	8/24	10:45 a.m. p.m.	9.5 ft		3	3	"	Sunny, calm
12	9/3	1:30 a.m. p.m.	9.5 ft		2	2	"	Sunny - windy
13		a.m. p.m.	ft					
14		a.m. p.m.	ft					
15		a.m. p.m.	ft					
16		a.m. p.m.	ft					
17		a.m. p.m.	ft					
18		a.m. p.m.	ft					
19		a.m. p.m.	ft					
20		a.m. p.m.	ft					
21		a.m. p.m.	ft					
22		a.m. p.m.	ft					
23		a.m. p.m.	ft					
24		a.m. p.m.	ft					
25		a.m. p.m.	ft					

At the end of your sampling season, please return the top page of this form by November 10, 2007

Minnesota Pollution Control Agency

Minnesota Lake Monitoring Program 2007 Secchi Data Sheet

Lake #86-0252

Site # 211

Office Use. Do not write in this space.

CLMP4571
Delores Roeder
463 Beachwood Rd
South Haven, MN 55382-9294

86-0252

- Use a separate data sheet for EACH site.
- If disk is on lake bottom, mark B next to Secchi.
- PC = Physical Condition; RC = Recreational Suitability
- Record carefully: 6 ft & 9 in is 6.75 ft - NOT 6.9 ft.
- For NEW sites, send in your marked lake map.

Lake Name: Clearwater County: Wright

Location of Lake: 3 miles North of Annandale

Phone: (320)-274-7272 = summer; (____)-_____ = winter.

Is this the same sampling site YOU monitored last year? yes Lake depth at sampling site: 30 ft.

Line #	2007 Date	Time	Secchi (nearest 1/2 ft)	*B	PC (1 5)	RS (1 5)	Color of Water	Other Notes
Ex.	5/20	10:15 a.m. p.m.	5.5 ft		2	3	Green	Breezy Temp: 70 F
1	6/9	1:15 a.m. p.m.	11.0 ft		2	2	Tan	cloudy. Breezy .25" rain yesterday
2	6/12	11:45 a.m. p.m.	8.5 ft		3	3	Greenish	Partly cloudy - Gree
3	6/21	2:45 a.m. p.m.	6.0 ft		2	2	Tan/green	Cloudy
4	6/29	12:30 a.m. p.m.	4.5 ft		3	3	Yellow/green	Sunny. Little wee
5	7/5	10:30 a.m. p.m.	5.0 ft		3	3	green	" "
6	7/12	11:30 a.m. p.m.	5.0 ft		2	2	Tan/green	Partly Cloudy very windy
7	7/17	10:15 a.m. p.m.	6.5 ft		3	3	" "	Hazy sun - c m
8	7/28	11:00 a.m. p.m.	4.5 ft		4	4	dk green	Mostly sunny - calm
9	8/6	1:00 a.m. p.m.	5.5 ft		2	2	dk tan/green	Hazy - light wind
10	8/13	11:00 a.m. p.m.	5.5 ft		2	2	"	Hazy - Windy
11	8/24	11:00 a.m. p.m.	7.0 ft		3	3	green	sunny, calm
12	9/3	1:45 a.m. p.m.	6.5 ft		2	2	Tan/green	windy - Sunny
13		a.m. p.m.	ft					
14		a.m. p.m.	ft					
15		a.m. p.m.	ft					
16		a.m. p.m.	ft					
17		a.m. p.m.	ft					
18		a.m. p.m.	ft					
19		a.m. p.m.	ft					
20		a.m. p.m.	ft					
21		a.m. p.m.	ft					
22		a.m. p.m.	ft					
23		a.m. p.m.	ft					
24		a.m. p.m.	ft					
25		a.m. p.m.	ft					

At the end of your sampling season, please return the top page of this form by November 10, 2007

Minnesota Pollution Control Agency

MPCA Citizen Lake-Monitoring Program 2005 Secchi Data Sheet

Lake #_____

Site #_____

CLMP5523
Jerome J Derosier
309 Alder Rd
South Haven, MN 55382

86-0243

- Use a separate data sheet for EACH site.
- If disk is on lake bottom, mark "B" next to Secchi.
- PC = Physical Condition; RC = Recreational Suitability
- Record carefully: 6 ft & 9 in is 6.75 ft - NOT 6.9 ft.
- For NEW sites, send in your marked lake map.

Lake Name: GRASS **County:** STEARNS & WRIGHT
Location of Lake: _____ miles _____ of _____.
Phone: (320)-274-8032 = summer; (07)-_____-_____ = winter.
Is this the same sampling site YOU monitored last year? YES **Lake depth at sampling site:** 30 ft.

Line #	2005 Date	Time	Secchi (nearest 1/2 ft)	*B	PC	RC	Color of Water	Data Entered Online?	Other Notes
Ex.	5-20	2:00 a.m. (p.m.)	7.5 ft		2	2	clear	yes	Sunny, slight breeze
1	6-14	11:00 (a.m.) p.m.	11' ft				✓	NO	S SB 30'
2	6-21	7:00 a.m. (p.m.)	9.5 ft				✓	"	cloudy SB 30'
3	7-27	2:00 a.m. (p.m.)	9.0 ft				✓	"	S SB 30'
4	8-3	4:1 (a.m.) p.m.	1.0' ft				murky	"	S calm
5	8-14	: a.m. (p.m.)	12' ft				CLEAR	"	SB.
6	8-24	11:00 a.m. (p.m.)	8' ft	after Rain			"	"	SB
7	8-30	noon a.m. p.m.	11' ft				Lt Dy	"	calm
8	9-5	10 a.m. (p.m.)	9.0 ft	"	"		"		SB
9		a.m. p.m.	ft						
10		a.m. p.m.	ft						
11		a.m. p.m.	ft						
12		a.m. p.m.	ft						
13		a.m. p.m.	ft						
14		a.m. p.m.	ft						
15		a.m. p.m.	ft						
16		a.m. p.m.	ft						
17		a.m. p.m.	ft						
18		a.m. p.m.	ft						
19		a.m. p.m.	ft						
20		a.m. p.m.	ft						
21		a.m. p.m.	ft						
22		a.m. p.m.	ft						
23		a.m. p.m.	ft						
24		a.m. p.m.	ft						
25		a.m. p.m.	ft						

At the end of your sampling season, please return the top page of this form by November 18, 2005

MPCA Citizen Lake-Monitoring Program 2007 Secchi Data Sheet

Lake # 86-0238
Site # 202
Office Use Do not write in this space.

Your Name: _____

Address: L Mr. William Lee
14451 Huber Ave. NW
Annandale, MN 55302-2214

- Use a separate data sheet for EACH site.
- If disk is on lake bottom, mark B next to Secchi.
- PC = Physical Condition; RC = Recreational Suitability
- Record carefully: 6 ft & 9 in is 6.75 ft - NOT 6.9 ft.
- For NEW sites, send in your marked lake map.

Lake Name: HIXON County: Wright
Location of Lake: 4 miles South of Clearwater.
Phone: (320)-558-6394 = summer; (____)-_____ = winter.
Is this the same sampling site YOU monitored last year? Yes Lake depth at sampling site: 32 ft.

Line #	2007 Date	Time	Secchi (nearest 1/2 ft)	*B	PC (1 5)	RS (1 5)	Color of Water	Other Notes
Ex.	5/20	10:15 a.m. p.m.	5.5 ft		2	3	Green	Breezy, Temp: 70 F
1	6-4	11 a.m. p.m.	9.0 ft		1	1	Clear	Calm - 70F
2	6-9	11: a.m. p.m.	10.0 ft		1	1	Clear	
3	6-14	11: a.m. p.m.	11.0 ft		1	1	Clear	
4		a.m. p.m.	ft					Dark Water Flow
5	7-2	11: a.m. p.m.	10.0 ft		1	1	Clear	
6	7-9	11: a.m. p.m.	10.0 ft		1	1	Clear	Calm - 70F
7	7-13	11: a.m. p.m.	10.0 ft		1	1	Clear	Light Brwn
8	7-20	11: a.m. p.m.	10.0 ft		1	1	Clear	
9	7-27	11: a.m. p.m.	10.5 ft		1	1	Clear	
10	8-2	11: a.m. p.m.	11.0 ft		1	1	Clear	
11	8-10	10:30 a.m. p.m.	11.0 ft		1	1	Clear	Calm - 80F
12	8-16	11: a.m. p.m.	12.5 ft		1	1	Clear	Calm - 70F
13	8-24	11:15 a.m. p.m.	12.0 ft		1	1	Clear	Calm - 70F
14	8-30	11: a.m. p.m.	12.0 ft		1	1	Clear	
15	9-9	11:30 a.m. p.m.	12.0 ft		1	1	Clear	Cool North Breeze
16		a.m. p.m.	ft					
17		a.m. p.m.	ft					
18		a.m. p.m.	ft					
19		a.m. p.m.	ft					
20	MAY WAS TO	a.m. p.m.	ft		Cloudy For me To Get readings.			
21		a.m. p.m.	ft					
22		a.m. p.m.	ft					
23		a.m. p.m.	ft					
24		a.m. p.m.	ft					
25		a.m. p.m.	ft					

At the end of your sampling season, please return the top page of this form by November 10, 2007

Minnesota Pollution Control Agency

MPCA Citizen Lake-Monitoring Program 2007 Secchi Data Sheet

Lake #_____

Site #_____

Office Use Do not write in this space.

CLMP6598
John Sedey
580 Lakeshore Cir
Annandale, MN 55302

86-0251

- Use a separate data sheet for EACH site.
- If disk is on lake bottom, mark B next to Secchi.
- PC = Physical Condition; RC = Recreational Suitability
- Record carefully: 6 ft & 9 in is 6.75 ft - NOT 6.9 ft.
- For NEW sites, send in your marked lake map.

Lake Name: Pleasant County: Wright

Location of Lake:_____ miles_____ of Annandale.

Phone: (320)-274-7407 = summer; (_____)-_____-_____ = winter.

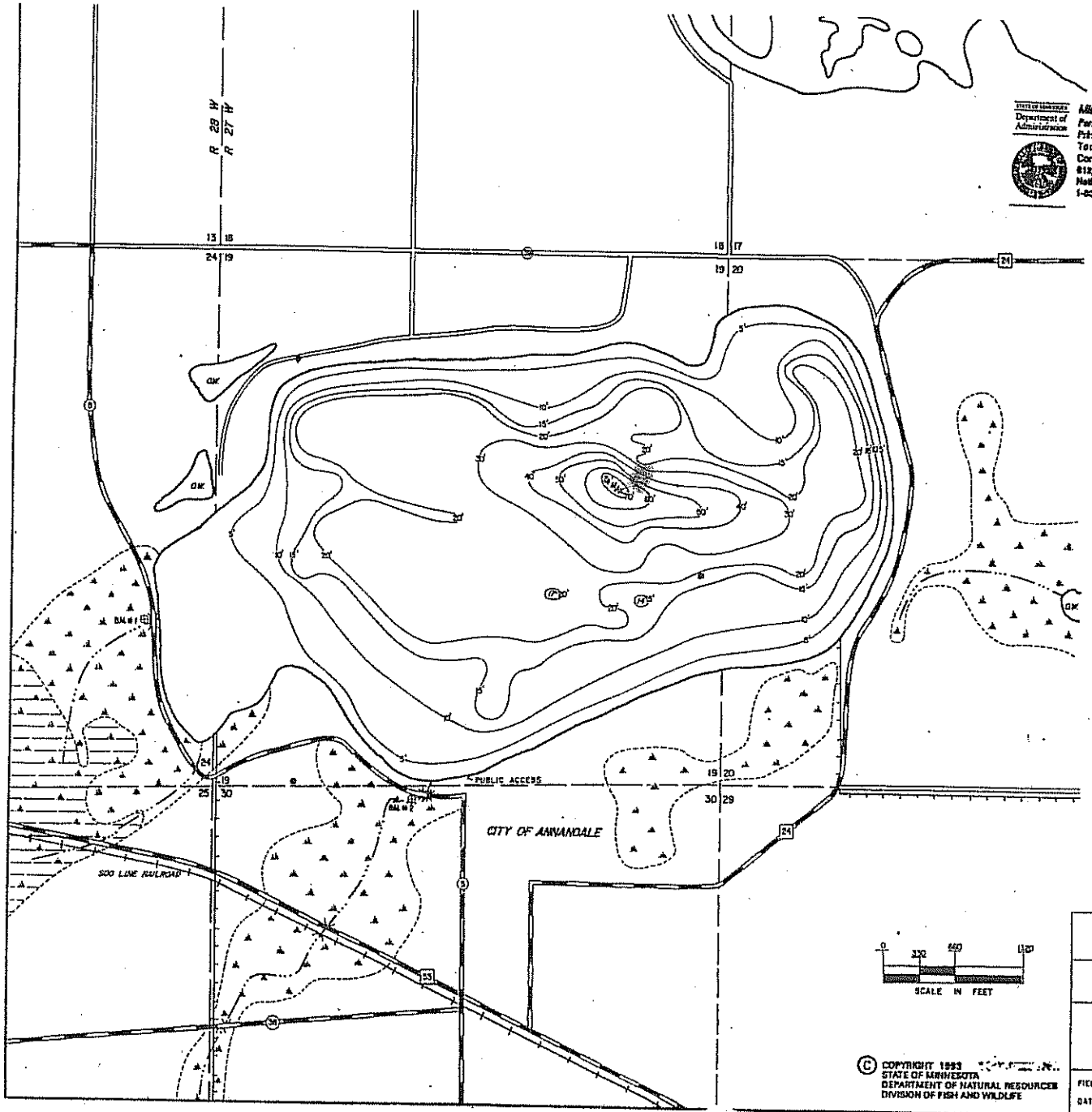
Is this the same sampling site YOU monitored last year? New Lake depth at sampling site: 60 ft.

Line #	2007 Date	Time	Secchi (nearest 1/2 ft)	*B	PC (1 5)	RS (1 5)	Color of Water	Other Notes
Ex.	5/20	10:15 (a.m.) p.m.	5.5 ft		2	3	Green	Breezy, Temp: 70 F
1	6/17	5:00 a.m. p.m.	3.5 ft		1	1	Clear	Breezy - 90°F
2	6/19	1:00 a.m. p.m.	3.5 ft		1	1	Clear	Breezy - 90°F
3	6/21	11:00 a.m. (p.m.)	3.5 ft		1	1	Clear	Light Br. - 80°F
4	6/19	2:00 a.m. (p.m.)	3.25 ft		1	1	Clear	Calm - °F
5	6/25	6:30 a.m. p.m.	7.0 ft		1	2	Clear	Light Breeze - 75°F
6	6/30	7:30 a.m. p.m.	5.0 ft		2	2	Light Green	No Calm - 55°
7	7/2	11:00 a.m. p.m.	5.0 ft		3	3	Light Green	Lite Breeze - 25°F
8	7/16	6:00 a.m. p.m.	5.5 ft		2	2	Clear	Lite Breeze - 75°F
9	7/25	2:00 a.m. p.m.	6.0 ft		2	2	Light Green	Calm - 65°F
10	8/2	12:00 a.m. p.m.	5.5 ft		3	4	Green	Calm - 75°F
11	8/16	1:00 a.m. p.m.	4.75 ft		3	3	Light Green	Calm - 70°F
12	9/24	8:30 a.m. p.m.	7.5 ft		2	2	Light Green	Breeze - 50°F
13	10/7	11:30 a.m. p.m.	6.75 ft		2	2	Light Green	Calm - 50°F
14		a.m. p.m.	ft					
15		a.m. p.m.	ft					
16		a.m. p.m.	ft					
17		a.m. p.m.	ft					
18		a.m. p.m.	ft					
19		a.m. p.m.	ft					
20		a.m. p.m.	ft					
21		a.m. p.m.	ft					
22		a.m. p.m.	ft					
23		a.m. p.m.	ft					
24		a.m. p.m.	ft					
25		a.m. p.m.	ft					

At the end of your sampling season, please return the top page of this form by November 10, 2007

Minnesota Pollution Control Agency

86-025



LEGEND

BITUMINOUS ROAD	
GRAVEL ROAD	
STATE HIGHWAY	□
COUNTY STATE AID HIGHWAY	○
RANGE LINE	
SECTION LINE	
SECTION NUMBER	20
BRUSH SWAMP	
MARSH	
OPEN WATER	OW
INTERMITTENT STREAM	
CITY LIMITS	
RAILROAD	
BRIDGE	
CULVERT	

PLANIMETERED AREA-	509 ACRES
LITTORAL AREA-	260 ACRES
LENGTH OF SHORELINE-	3.9 MILES

B.M.#1- TOP CENTER OF CONCRETE CULVERT ON WEST END OF LAKE.
W.S.E. WAS 3.5' ABOVE B.M. #1.

B.M.#2- TOP CENTER OF CULVERT UNDER CONCRETE BRIDGE RAILS ON SOUTH END OF LAKE.
W.S.E. WAS 1.0 FEET BELOW B.M. #2.

0 330 660 1320
SCALE IN FEET

FINANCED WITH AID OF DINGELL-JOHNSON FUNDS

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF FISH AND WILDLIFE
ECOLOGICAL SERVICES SECTION

PLEASANT LAKE (86-251)
WRIGHT COUNTY

T. 121 N. R. 27,28 W. S. 19, 20, 24, 30

FIELDWORK	DRAWN BY	PROJ. IDENT. NO.
DATE 7-24-78	DATE 1-19-79	F-W-(-R-20) 23

C-3

MPCA Citizen Lake-Monitoring Program 2007 Secchi Data Sheet

Lake # _____

Site # _____

Office Use Do not write in this space.

CLMP5522 86-0251

Jim Peterson
Box 21
Annandale, MN 55302

- Use a separate data sheet for EACH site.
- If disk is on lake bottom, mark B next to Secchi.
- PC = Physical Condition; RC = Recreational Suitability
- Record carefully: 6 ft & 9 in is 6.75 ft - NOT 6.9 ft.
- For NEW sites, send in your marked lake map.

Lake Name: Pleasant **County:** Wright

Location of Lake: _____ miles _____ of _____.

Phone: (320)-274-5043 = summer; (N/A)-_____-_____ = winter.

Is this the same sampling site YOU monitored last year? Yes **Lake depth at sampling site:** 16+ ft.

Line #	2007 Date	Time	Secchi (nearest 1/2 ft)	*B	PC (1 5)	RS (1 5)	Color of Water	Other Notes
Ex.	5/20	10:15 (a.m.) p.m.	5.5 ft		2	3	Green	Breezy, Temp: 70 F
1	5/9	6:45 a.m. (p.m.)	10.5 ft		2	1	blue-clear	Calm, Sunny 80°
2	5/19	1:00 a.m. (p.m.)	10.5 ft		2	2	blue-clear	Calm, Sunny
3	5/27	3:30 a.m. (p.m.)	12.5 ft		2	2	blue-clear	Breezy, Sun 65°
4	6/10	1:30 a.m. (p.m.)	10 ft		2	2	blue-clear	Calm, Sun 83°
5	6/16	11:45 (a.m.) p.m.	11.5 ft		2	2	blue	Calm, Sun 80°
6	7/1	2:25 a.m. (p.m.)	10 ft		2	2	blue	Breezy, Sun 80°
7	7/6	7:15 a.m. (p.m.)	9 ft		2	2	blue/Green	Calm, Sun 90° humid
8	7/16	5:30 a.m. (p.m.)	7.5 ft		2	2	blue/Green	Calm, Cloudy humid
9	7/22	7:30 a.m. (p.m.)	6.5 ft		2	2	Green	Calm, Sun humid 85
10	8/1	3:00 a.m. (p.m.)	4.5 ft		2	2	Green	Breezy, Sun, humid 90
11	8/12	2:00 a.m. (p.m.)	4.5 ft		2	2	Green	Breezy, Cloudy 74°
12	8/25	6:30 a.m. (p.m.)	4.5 ft		3	3	Green/weeds	Calm, Sun 70°
13	8/30	11:00 (a.m.) p.m.	4 ft		3	3	Green	Calm, Sunny 70°
14	9/3	10:30 (a.m.) p.m.	4 ft		3	3	Green	Calm, Sunny 75°
15	9/22	3:30 a.m. (p.m.)	6.5 ft		2	3	Green/blue	Calm Sunny 78°
16	10/7	3:00 a.m. (p.m.)	6.5 ft		2	2	Green/clear	Calm, PSunny 80°
17	10/17	10:00 (a.m.) p.m.	8.5 ft		2	2	Green/clear	Calm, Cloudy 55°
18		a.m. p.m.	ft					
19		a.m. p.m.	ft					
20		a.m. p.m.	ft					
21		a.m. p.m.	ft					
22		a.m. p.m.	ft					
23		a.m. p.m.	ft					
24		a.m. p.m.	ft					
25		a.m. p.m.	ft					

At the end of your sampling season, please return the top page of this form by November 10, 2007

Appendix F

2007 Water Quality Laboratory Reports and Data

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: June 5, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 04-19-07
Date Sampled: 04-18-07
Authorization: 04-19-07

Parameter	SCE01 07-1635	SCE03 07-1636	SSW01 07-1637	SSW02 07-1638	SSW03 07-1639	MDL	Method*	Date Analyzed
T-Phosphorus	0.041	0.054	0.218	0.112	0.071	0.01	4500:B.5&E	05-11
O-Phosphorus	<0.005	0.0063	<0.005	0.048	0.010	0.005	4500-P:E	04-19
TSS	9.00	<4.00	43.0	<4.00	<4.00	4.0	2540D	04-20
VSS	5.00	<4.00	25.0	<4.00	<4.00	4.0	2540 D&E	04-20

Parameter	SHE01 07-1640	SDD01 07-1641	SSW04 07-1642	FD1 07-1643	MDL	Method*	Date Analyzed
T-Phosphorus	0.148	0.054	0.227	0.245	0.01	4500:B.5&E	05-11
O-Phosphorus	<0.005	0.043	0.0055	0.0063	0.005	4500-P:E	04-19
TSS	10.0	<4.00	12.0	13.0	4.0	2540D	04-20
VSS	9.00	<4.00	12.0	13.0	---	2540 D&E	04-20

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DATA
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-1636	93%	95%	---	2.3%
O-Phosphorus	07-1635	95%	97%	---	1.6%
TSS	07-1639	---	---	---	0.0%
VSS	07-1639	---	---	---	0.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\2006\wenck\6760crwd-015

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: Wmc G
PROJECT: CRAD
LABORATORY NUMBER: 92SC760

DATE RECEIVED: 4/19/07
CARRIER: Fedex

CHECKLIST COMPLETED BY: DH

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	NA	NA
12. Trip Blank recieved?		X

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 2.7°C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: DH		
17. Metals bottle(s) pH < 2?		
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

№ 6964

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: W Bell

AIRBILL NO.:

PROJ. NO.: CCC2 - 108

PROJ. NAME: CRWD - Streams

SAMPLERS (Signature): Wesley Bell

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	SAMPLE MATRIX: Soil	Water	Other	FC	Cl/Hard	TSS	VSS				REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
1635	4/19/07	9:50		X	SCE01		X		X	X	X	X				500mL Unpreserved 250mL H_2SO_4
1636		10:15			SCE03											
1637		10:35			SSW01											
1638		11:00			SSW02											
1639		11:20			SSW03											
1640		12:05			SHE01											
1641		11:35			SD01											
1642		12:30			SSW04											
1643	—			—	FD1		—		—	—	—	—				—

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Wesley Bell	4/19/07	14:30					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
						4/19/07 1000

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-[illegible]

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: June 22, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 05-18-07
Date Sampled: 05-17-07
Authorization: 05-18-07

Parameter	SSW04 07-2270	SCE01 07-2271	SCE03 07-2272	SSW03 07-2273	SSW02 07-2274	MDL	Method*	Date Analyzed
T-Phosphorus	0.334	0.018	0.306	0.024	0.415	0.01	4500:B.5&E	06-05
O-Phosphorus	0.181	00057	0.006	0.020	0.146	0.005	4500-P:E	05-18
TSS	26.5	7.00	39.0	<4.00	11.0	4.0	2540D	05-18
VSS	15.0	<4.00	11.0	<4.00	7.00	4.0	2540 D&E	05-18

Parameter	SSW01 07-2275	SDD01 07-2276	SHE01 07-2277	FD 07-2278	MDL	Method*	Date Analyzed
T-Phosphorus	0.259	0.405	0.279	0.353	0.01	4500:B.5&E	06-05
O-Phosphorus	0.022	0.067	0.011	0.115	0.005	4500-P:E	05-18
TSS	67.0	6.00	29.0	10.0	4.0	2540D	05-18
VSS	38.0	<4.00	23.0	5.00	---	2540 D&E	05-18

MDL - Method Detection Limit
All results are in milligrams per liter.
*Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA		PRECISION DATA	
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-2278	101%	104%	---	1.3%
O-Phosphorus	07-2270	97%	90%	---	3.1%
TSS	07-2270	---	---	---	3.8%
VSS	07-2270	---	---	---	0.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
Lab Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-004

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: Wenck
PROJECT: Clearwater
LABORATORY NUMBER: 485760

DATE RECEIVED: 5/18/07
CARRIER: Fedex

CHECKLIST COMPLETED BY: OH

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	N/A	
12. Trip Blank recieved?		X

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 2.8 °C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: OH		
17. Metals bottle(s) pH < 2?		
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

№ 72.3

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR

AIRBILL NO.

PROJ. NO. C002-109

PROJ. NAME Clearwater

SAMPLERS (Signature)

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	SAMPLE MATRIX: Soil	Water	Other	82	8f	827	533				REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
2270	5.1.07	1330		X	SSW04		X		X	X	X	X				
2271		0920			SCE01											
2272		10:10			SCE03											
2273		1030			SSW03											
2274		10-45			SSW02											
2275		1130			SSW01											
2276		1200			SD001											
2277	↓	1230		↓	SHE01		↓		↓	↓	↓	↓				
2278	5.1.07	—		X	FD		X		X	X	X	X				

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
	5/17/07	1405					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				5/18/07	0900	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: July 11, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 06-05-07
Date Sampled: 06-04-07
Authorization: 06-05-07

Parameter	SCE03 07-2649	SSW02 07-2650	SSW03 07-2651	SDD01 07-2652	SHE01 07-2653	MDL	Method*	Date Analyzed
T-Phosphorus	0.183	2.61	0.157	0.173	0.256	0.01	4500:B.5&E	06-25
O-Phosphorus	0.011	0.416	0.060	0.127	0.011	0.005	4500-P:E	06-05
TSS	5.00	172	5.00	4.00	37.0	4.0	2540D	06-07
VSS	<4.00	135	<4.00	<4.00	29.5	4.0	2540 D&E	06-02

Parameter	SSW04 07-2654	SCE01 07-2655	FD1 07-2656	MDL	Method*	Date Analyzed
T-Phosphorus	0.781	0.035	0.043	0.01	4500:B.5&E	06-25
O-Phosphorus	0.493	<0.005	<0.005	0.005	4500-P:E	06-05
TSS	7.00	7.00	9.00	4.0	2540D	06-07
VSS	6.00	5.00	5.00	---	2540 D&E	06-02

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA		PRECISION DATA	
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-2649	97%	93%	---	4.7%
O-Phosphorus	07-2649	95%	97%	---	1.4%
TSS	07-2653	---	---	---	0.0%
VSS	07-2653	---	---	---	3.4%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
Manager

R:data\wpfiles\dth\wenck\2007\6760crwd-009

Dan T. Hanson
Chemistry Manager

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: Wenck
PROJECT:
LABORATORY NUMBER: 9756760

DATE RECEIVED: 6/5/07
CARRIER: Fedex

CHECKLIST COMPLETED BY: DH

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	N/A	
12. Trip Blank recieved?		

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 1.6 °C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: DH		
17. Metals bottle(s) pH < 2?		
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

MVTL LABORATORIES, Inc.

1126 North Front Street
New Ulm, MN 56073
Phone: (507) 354-8517
Toll Free: (800) 782-3557 Fax: (507) 359-2890

Chain of Custody Record

Page_____of_____.

Work Order #

Company Name and Address:
Wenck Associates
1800 pioneer Creek Ctr
Maple Plain, MN

Billing Address (indicate if different from above):
"

Account #:

Phone #:

Contact:
Wes Doll

Fax #:
For faxed report check box ☐

Name of Sampler:
Nick Chastensen

E-mail:
For e-mail report check box ☐

Quote Number

Date Submitted:

Project Name/Number:
0002-108

Purchase Order #:

Sample Information

Lab Number	Sample ID	Sample Type (Food, Soil, Water, Etc.)	Date Sampled	Time Sampled
2649	SCE03	Water	6.4.07	0930
2650	SSW02			1010
2651	SSW03			1045
2652	SOD01			1100
2653	SWE01			1130
2654	SSW04			1215
2655	SCE01			0900
2656	FD1			—

Bottle Type

VOC Vials	500 ml unpres.	1000 ml unpres.	500 ml HNO3	1000 ml HNO3	500 ml H2SO4	1000 ml H2SO4	Sterile plastic	Amber H2SO4	500 ml NaOH	Filtered? Y or N	250 ml Other: Surfine
	2X (1)										1X

Analysis

TP, OP, TSS, VSS

Analysis Required

all

Comments:

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Time:	Temp:
1. Nick Chastensen	6.5.07	1300	Ice				
2.				[illegible]	6/5/07	0845	

Please submit the top two copies with your samples. We will return the completed original with your re[illegible]

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: July 25, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: WES BOLL
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 06-19-07
Date Sampled: 06-18-07
Authorization: 06-18-07

Parameter	SCE01 07-3055	SSW04 07-3056	SCE03 07-3057	SSW02 07-3058	SSW03 07-3059	MDL	Method*	Date Analyzed
T-Phosphorus	0.062	1.21	0.217	1.00	0.666	0.01	4500:B.5&E	07-06
O-Phosphorus	0.014	0.276	0.0046	0.448	0.118	0.005	4500-P:E	06-19
TSS	13.0	9.00	20.0	60.0	158	4.0	2540D	06-22
VSS	5.00	4.00	8.00	45.0	39.0	4.0	2540 D&E	06-22

Parameter	SDD01 07-3060	SHE01 07-3061	FD1 07-3062	MDL	Method*	Date Analyzed
T-Phosphorus	0.538	0.681	0.053	0.01	4500:B.5&E	07-06
O-Phosphorus	0.411	0.031	<0.005	0.005	4500-P:E	06-19
TSS	<4.00	95.0	6.00	4.0	2540D	06-22
VSS	<4.00	45.0	4.00	---	2540 D&E	06-22

MDL - Method Detection Limit
All results are in milligrams per liter.
*Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA		PRECISION DATA	
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-3011	103%	90%	---	13%
O-Phosphorus	07-3055	97%	96%	---	0.8%
TSS	07-3061	---	---	---	2.1%
VSS	07-3061	---	---	---	4.4%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
Project Manager

Dan T. Hanson
Chemistry Manager

k:data\wpfiles\dth\wenck\2007\6760crwd-010

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: Wench
PROJECT: Clearwater
LABORATORY NUMBER: 92570

DATE RECEIVED: 6/15/07
CARRIER: UPS

CHECKLIST COMPLETED BY: DH

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquished and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	N/A	
12. Trip Blank recieved?		

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 0.2°C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: DH		
17. Metals bottle(s) pH < 2?		
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

For Braun Intertec Use Only
Laboratory Work Order No.

BRAUN INTERTEC
Braun Intertec Corporation
11001 Hampshire Ave. S
Minneapolis, MN 55438

REQUEST FOR LABORATORY ANALYTICAL SERVICES

Bottle orders and sampling inquires:
labservices@braunintertec.com
Phone: 952-995-2600 Fax: 952-995-2601

IMPORTANT
Date Results Requested: _____
Time _____
Rush Charges Authorized? ____ Yes ____ No
Rush / Quote # _____

REPORT RESULTS TO
Contact Name Wes Bell
Company Wenck Associates
Mailing Address
City, State, Zip
Telephone # Fax #
E-mail

Project ID/Name Clearwater
P.O. #/Project #

SEND INVOICE TO
Contact Name Company
Address
City, State, Zip
Telephone # Fax #

Special Instructions and/or Specific Regulatory Requirements:
(method, limit of detection, petrofund, reporting units)

ANALYSIS REQUESTED
(Enter an 'X' in the box below to indicate request)

	CLIENT SAMPLE IDENTIFICATION	DATE SAMPLED	TIME SAMPLED	MATRIX/ MEDIA	AIR VOLUME (specify units)	Number of Containers	Metals Field Filtered Y/N	TP	OP	TSS	VSS	FOR LAB USE ONLY
1	SCE01	6.18.07	0910	Wtr				X	X	X	X	3055
2	SSW04	↓	1200	↓				↓	↓	↓	↓	3056
3	SCE03		0945									3057
4	SSW02		1020									3058
5	SSW03		1040									~~3059~~
6	SDD01		1100									3060
7	SHE01		1130									3061
8	FD1	↓	—	↓								3062
9												
10												
11												
12												
13												
14												
15												

CHAIN OF CUSTODY
Collected by: (Print) Nick Christensen
Collector's Signature:
Relinquished by: [signature] Date/Time 6.18.07 1300
Received by: [signature] Date/Time 6/19/07 0930
Relinquished by: Date/Time
Received Contents Not Verified: Date/Time
Custody Seal Intact ☐ Yes ☐ No ☐ N/A
On Ice ☒ Yes ☐ No
Received Contents Verified: Date/Time
Temp Blank ☐ Yes ☒ No
Temp: ____ °C
Comments:

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: July 3, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 05-26-07
Date Sampled: 05-25-07
Digestion Date: 06-04-07

Parameter	LCE01T 07-2458	LCE01B 07-2459	LSW01T 07-2460	LSW01B 07-2461	MDL	Method*	Date Analyzed
T-Phosphorus	0.018	0.056	0.254	0.350	0.01	4500:B.5&E	06-21
O-Phosphorus	<0.005	0.039	0.0078	0.0070	0.005	4500-P:E	05-26
Total Nitrogen	0.949	---	1.61	---	0.01	4500-NO_3:E	06-12
Chlorophyll A	147	---	8.01	---	0.2	10200H	05-31
Iron	---	0.14	---	0.90	0.03	3111B	06-05

Parameter	LAL01T 07-2462	LAL01B 07-2463	LHE01T 07-2464	LHE01B 07-2465	MDL	Method*	Date Analyzed
T-Phosphorus	0.112	0.110	0.193	0.191	0.01	4500:B.5&E	06-21
Phosphorus	0.0078	0.011	<0.005	<0.005	0.005	4500-P:E	05-18
otal Nitrogen	2.39	---	1.33	---	0.01	4500-NO_3:E	05-18
Chlorophyll A	34.2	---	107	---	0.2	10200H	05-18
Iron	---	0.25	---	0.32	0.03	3111B	06-05

MDL - Method Detection Limit
All results are in milligrams per liter.
*Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DATA
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-2461	103%	94%	---	9.5%
O-Phosphorus	07-2458	96%	97%	---	0.8%
Total Nitrogen	07-2295	98%	103%	---	2.2%
Chlorophyll A	07-2458	---	---	---	1.4%
Iron	07-2463	94%	96%	---	1.4%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-005

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: Wrench
PROJECT: CRND
LABORATORY NUMBER: 9855760

DATE RECEIVED: 5/26/07
CARRIER: FedEx

CHECKLIST COMPLETED BY: DH

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	~	
12. Trip Blank recieved?		A

	YES	NO
13. Ice/Brozen Blue Ice present?	X	
14. Container temperature? 3.1°C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: DH		
17. Metals bottle(s) pH < 2?	X	
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

№ 7370

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: W Bohl

AIRBILL NO.: 9554 0962 3550

PROJ. NO.: 0002-108

PROJ. NAME: CRWD - Lakes

SAMPLERS (Signature)

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	SAMPLE MATRIX: Soil	Water	Other	TP	OP	TN	Chlor-A	Total Fe			REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
																(A) 500mL Unpreserved (B) 250mL H_2SO_4 (C) 250mL HNO_3 (D) 1L Amber
2458	5/24/07	0855		X	LCE01T		X		X	X	X	X				A, B, D
2459		0915		X	LCE01B		X		X	X			X			A, B, C
2460		1025		X	LSW01T		X		X	X	X	X				A, B, D
2461		1045		X	LSW01B		X		X	X			X			A, B, C
2462		1125		X	LAL01T		X		X	X	X	X				A, B, D
2463		1145		X	LAL01B		X		X	X			X			A, B, C
2464		1210		X	LHE01T		X		X	X	X	X				A, B, D
2465	5/24/07	1230		X	LHE01B		X		X	X			X			A, B, C

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
[signature]	5/25/07	1345					
Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments	
			[signature]	5/26/07	1350		

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-84[illegible]

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: August 14, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 06-30-07
Date Sampled: 06-29-07
Digestion Date: 07-12-07

Parameter	LCE01T 07-3362	LCE01B 07-3363	LSW01T 07-3364	LSW01B 07-3365	MDL	Method*	Date Analyzed
T-Phosphorus	0.045	0.158	0.358	0.391	0.01	4500:B.5&E	07-23
O-Phosphorus	<0.005	0.121	0.017	0.014	0.005	4500-P:E	06-30
Total Nitrogen	1.13	---	4.37	---	0.01	4500-NO_3:E	07-17
Chlorophyll A	11.2	---	264	---	0.2	10200H	07-06
Iron	---	0.08	---	0.69	0.03	3111B	07-18

Parameter	LAL01T 07-3366	LAL01B 07-3367	LHE01T 07-3368	LHE01B 07-3369	MDL	Method*	Date Analyzed
T-Phosphorus	0.252	0.230	0.422	0.395	0.01	4500:B.5&E	07-23
O-Phosphorus	0.136	0.137	<0.005	<0.005	0.005	4500-P:E	06-30
Total Nitrogen	3.11	---	6.76	---	0.01	4500-NO_3:E	07-17
Chlorophyll A	4.27	---	262	---	0.2	10200H	07-06
Iron	---	0.54	---	0.47	0.03	3111B	07-18

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DATA
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-3357	97%	104%	---	6.8%
O-Phosphorus	07-3362	97%	95%	---	2.4%
Total Nitrogen	07-3362	98%	103%	---	2.3%
Chlorophyll A	07-3364	---	---	---	6.1%
Iron	07-3363	94%	94%	---	0.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-014

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: CRWD
PROJECT:
LABORATORY NUMBER: 585760

DATE RECEIVED: 6/30/07
CARRIER: Fed Ex

CHECKLIST COMPLETED BY: DH

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	N/A	
12. Trip Blank recieved?		

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 2.1°C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: DH		
17. Metals bottle(s) pH < 2?	X	
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

№ 7..1

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: W BOLL

AIRBILL NO.:

PROJ. NO.: 0002-108

PROJ. NAME: CRWD-Lakes

SAMPLERS (Signature): Wesley Ball

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	Soil	Water	Other	TP	OP	TN	Chlor-a	Total Fe			REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
																A 500 mL B 250 mL H_2SO_4 C 250 mL HNO_3 D 1 L Glass Amber
3362	6/29/07	9:00		X	LCEØIT		X		X	X	X	X				A B D
3363		9:15			LCEØIB				X	X			X			A B C
3364		10:30			LSWØIT				X	X	X	X				A B D
3365		10:45			LSWØIB				X	X			X			A B C
3366		11:10			LALØIT				X	X	X	X				A B D
3367		11:20			LALØIB				X	X			X			A B C
3368		11:50			LHEØIT				X	X	X	X				A B D
3369		12:00			LHEØIB				X	X			X			A B C

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Wesley Ball	6/29/07	14:30					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				6/30/07	1415	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: August 14, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 07-28-07
Date Sampled: 07-27-07
Digestion Date: 08-09-07

Parameter	LCE01T 07-4015	LCE01B 07-4016	LSW01T 07-4017	LSW01B 07-4018	MDL	Method*	Date Analyzed
T-Phosphorus	0.020	0.150	0.184	0.211	0.01	4500:B.5&E	08-03
O-Phosphorus	0.0061	0.129	0.0053	0.0053	0.005	4500-P:E	07-28
Total Nitrogen	1.15	---	3.13	---	0.01	4500-NO_3:E	08-10
Chlorophyll A	8.54	---	130	---	0.2	10200H	08-05
Iron	---	0.12	---	0.18	0.03	3111B	08-14

Parameter	LAL01T 07-4019	LAL01B 07-4020	LHE01T 07-4021	LHE01B 07-4022	MDL	Method*	Date Analyzed
·Phosphorus	0.263	0.242	0.493	0.476	0.01	4500:B.5&E	08-03
/-Phosphorus	0.032	0.035	0.0061	<0.005	0.005	4500-P:E	07-28
Total Nitrogen	4.10	---	7.66	---	0.01	4500-NO_3:E	08-10
Chlorophyll A	238	---	342	---	0.2	10200H	08-05
Iron	---	0.41	---	0.53	0.03	3111B	08-14

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DATA
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-4020	102%	110%	---	10%
O-Phosphorus	07-4015	98%	94%	---	6.6%
Total Nitrogen	07-4015	99%	92%	---	3.7%
Chlorophyll A	07-4017	---	---	---	0.0%
Iron	07-4147	106%	102%	---	3.8%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

:ginia VerMulm
A Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-016

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: CLWD Lakes
PROJECT: 98572760
LABORATORY NUMBER: 4015-4027

DATE RECEIVED: 7.30.07
CARRIER: Fed Ex

CHECKLIST COMPLETED BY: CS

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?	X	
3. Condition: Intact X Broken		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	Y	
6. Chain of custody agrees with sample labels?	X	
Custody seals on sample bottles?		X
8. Condition: Intact NA Broken		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	NA	
12. Trip Blank recieved?		X

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 4.0C		
15. All samples recieved within holding time?		X
PRESERVATION:		
16. pH check performed by: CS		
17. Metals bottle(s) pH < 2?	X	
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?	NA	
20. Oil & Grease bottle(s) pH < 2?	/	
21. DRO/418.1 bottle(s) pH < 2?	/	
22. Phenolics bottle(s) pH < 2?	/	
23. Volatiles (VOA) pH < 2? (checked by analyst)	/	

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: cooler not at FedEx for pickup on Saturday AM
Saturday delivery not marked on FedEx label

TETRA TECH, INC.

TETRA TECH

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: October 31, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 08-25-07
Date Sampled: 08-24-07
Digestion Date: 08-29-07

Parameter	LCE01T 07-4727	LCE01B 07-4728	LSW01T 07-4729	LSW01B 07-4730	MDL	Method*	Date Analyzed
Chlorophyll A	13.9	---	269	---	0.2	10200H	09-09
T-Phosphorus	0.031	0.159	0.251	0.238	0.01	4500:B.5&E	09-22
O-Phosphorus	0.0057	0.139	0.024	0.0089	0.005	4500-P:E	08-25
Total Nitrogen	1.11	---	1.45	---	0.01	4500-NO_3:E	09-21
Iron	---	0.044	---	0.109	0.03	3111B	09-05

Parameter	LAL01T 07-4731	LAL01B 07-4732	LHE01T 07-4733	LHE01B 07-4734	MDL	Method*	Date Analyzed
Chlorophyll A	40.1	---	401	---	0.2	10200H	09-09
T-Phosphorus	0.116	0.115	0.450	0.467	0.01	4500:B.5&E	09-22
O-Phosphorus	0.016	0.029	0.011	0.024	0.005	4500-P:E	08-25
Total Nitrogen	2.30	---	7.25	---	0.01	4500-NO_3:E	09-21
Iron	---	0.354	---	0.346	0.03	3111B	09-05

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DATA
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
Chlorophyll A	07-4679	---	---	---	0.0%
T. Phosphorus	07-4796	93%	99%	---	6.1%
O-Phosphorus	07-4728	94%	99%	---	2.1%
Total Nitrogen	07-4186	90%	102%	---	1.9%
Iron	07-4728	108%	108%	---	0.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-020

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: CRWD
PROJECT: Lake1
LABORATORY NUMBER: 285700

DATE RECEIVED: 8/25/17
CARRIER: FedEx

CHECKLIST COMPLETED BY: DF

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	NA	
12. Trip Blank recieved?		NA

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 3.1°C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: DH		
17. Metals bottle(s) pH < 2?	X	
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

№ 7372

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: W Boll

AIRBILL NO.:

PROJ. NO.: 0002-108

PROJ. NAME: CRWD Lakes

SAMPLERS (Signature): Wesley Boll

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	Soil	Water	Other	TP	OP	TN	Chlor-a	Total Fe			REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
																A 1 L Amber B 500 mL Unpreserved C 250 mL H_2SO_4 D 250 mL HNO_3
4727	8/24/07	8:30		X	LCEØIT		X		X	X	X	X				A B C
4728		8:45			LCEØIB				X	X			X			B C D
4729		9:45			LSWØIT				X	X	X	X				A B C
4730		9:50			LSWØIB				X	X			X			B C D
					~~LSW~~ (WB)											
4731		10:30			LALØIT				X	X	X	X				A B C
4732		10:35			LALØIB				X	X			X			B C D
4733		11:00			LHEØIT				X	X	X	X				A B C
4734		11:10			LHEØIB				X	X			X			B C D

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Wesley Boll	8/24/07	15:00					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				8/28/07	1430	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-
Fax: (605) 332-

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: June 15, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 05-02-07
Date Sampled: 05-01-07
Authorization: 05-02-07

Parameter	WR02 07-1895	UN10N 07-1896	UN1N 07-1897	CR28.2 07-1898	MDL	Method*	Date Analyzed
T-Phosphorus	0.041	0.034	0.055	0.105	0.01	4500:B.5&E	05-25
O-Phosphorus	<0.005	0.019	<0.005	0.054	0.005	4500-P:E	05-02
TSS	9.00	<4.00	9.00	11.0	4.0	2540D	05-04

MDL - Method Detection Limit
All results are in milligrams per liter.
*Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA		PRECISION DATA	
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-1904	100%	97%	---	2.7%
O-Phosphorus	07-1890	95%	96%	---	1.6%
TSS	07-1895	---	---	---	0.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\2006\wenck\6760crwd-002

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: Wench
PROJECT: CRUD
LABORATORY NUMBER: 93570

DATE RECEIVED: 5/4/07
CARRIER: Speedee

CHECKLIST COMPLETED BY: DH

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	N/A	
12. Trip Blank recieved?		N/A

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 2.7°		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: DH		
17. Metals bottle(s) pH < 2?		
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES___ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

CRWD 5 rams

No 7_.5

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: Norm Wenck

AIRBILL NO.:

PROJ. NO.:

PROJ. NAME: CRWD.

SAMPLERS (Signature): Ken Wittbrock

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	SAMPLE MATRIX: Soil	Water	Other	Total Phosphorus	Soluble Reactive Phosphorus	Total Suspended Solids				REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
1	5/07	8 30		–	WRO.2		–		–	–	–				1895
2	1	9 20		–	UNION IN		–		–	–	–				1896
3	1	10 30		–	UNION OUT		–		–	–	–				1897
4	1	11 45		–	CR 28.2		–		–	–	–				1898

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Ken Wittbrock	5/07	4 50					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				5/8/07	1 30	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: June 22, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 05-24-07
Date Sampled: 05-22-07
Authorization: 05-24-07

Parameter	Union In 07-2418	Union Out 07-2419	CR 28.2 07-2420	WR0.2 07-2421	MDL	Method*	Date Analyzed
T-Phosphorus	0.070	0.038	0.193	0.035	0.01	4500:B.5&E	06-05
O-Phosphorus	0.055	<0.005	0.068	0.014	0.005	4500-P:E	05-24
TSS	<4.00	12.8	36.0	5.60	4.0	2540D	05-25

MDL - Method Detection Limit
All results are in milligrams per liter.
*Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DATA
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-2278	102%	90%	---	13%
O-Phosphorus	07-2407	96%	98%	---	1.8%
TSS	07-2411	---	---	---	3.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\2006\wenck\6760crwd-003

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: Weacle
PROJECT: _____
LABORATORY NUMBER: 985760

DATE RECEIVED: 5/24/07
CARRIER: Speedee

CHECKLIST COMPLETED BY: DH

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	NA	
12. Trip Blank recieved?		NA

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 3.7°C		
15. All samples recieved within holding time?		X
PRESERVATION: SRM out of holding		
16. pH check performed by: DH		
17. Metals bottle(s) pH < 2?		
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

Streams

No 7157

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: Norm Wenck

AIRBILL NO.:

PROJ. NO.:

PROJ. NAME: CRWD

SAMPLERS (Signature): Kevin Wattrat

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	SAMPLE MATRIX: Soil	Water	Other	Total Phosphorus	Soluble Reactive Phosphorus	Total Suspended Solids					REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
1	4/29	1600			CR Union IN		–		–	–	–					2418
2		1100			Union OUT		–		–	–	–					2419
3		1200			CR 28.2		–		–	–	–					2420
4		200			WRO.2		–		–	–	–					2421

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Kevin Wattrat	5/2	300					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				5/2/07	1240	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5771
Fax: (605) 332

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: July 2, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 05-31-07
Date Sampled: 05-30-07

Parameter	Union Outlet 07-2576	Union Inlet 07-2577	MDL	Method*	Date Analyzed
T-Phosphorus	0.043	0.103	0.01	4500:B.5&E	06-21
O-Phosphorus	0.022	0.078	0.005	4500-P:E	05-31
TSS	7.00	<4.00	4.0	2540D	06-01

MDL - Method Detection Limit
All results are in milligrams per liter.
*Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA		PRECISION DATA	
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-2576	101%	100%	---	1.5%
O-Phosphorus	07-2572	94%	97%	---	1.6%
TSS	07-2572	---	---	---	0.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm/mtt
Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-006

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: Wenck
PROJECT: _____
LABORATORY NUMBER: 9856760

DATE RECEIVED: 5/31/07
CARRIER: Speedee UPS

CHECKLIST COMPLETED BY: OH

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	N/A	
12. Trip Blank recieved?		N/A

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 0.8°C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: OH		
17. Metals bottle(s) pH < 2?		
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

MVTL LABORATORIES, Inc.
1126 North Front Street
New Ulm, MN 56073
Phone: (507) 354-8517
Toll Free: (800) 782-3557 Fax: (507) 359-2890

Chain of Custody Record

Page 1 of 1

Work Order #

Company Name and Address:
Wenck Associates
1800 plaza CRK Cntr.
Maple Plain, MN

Billing Address (indicate if different from above):
11 "

Account #:

Phone #:

Contact:
Wes Boll

Fax #:
For faxed report check box ☐

Name of Sampler:
Nick Christensen

E-mail:
For e-mail report check box ☐

Quote Number

Date Submitted:

Project Name/Number:
0002-108

Purchase Order #:

Sample Information

Bottle Type

Analysis

Lab Number	Sample ID	Sample Type (Food, Soil, Water, Etc.)	Date Sampled	Time Sampled	VOC Vials	500 ml unpres.	1000 ml unpres.	500 ml HNO3	1000 ml HNO3	500 ml H2SO4	1000 ml H2SO4	Sterile plastic	Amber H2SO4	500 ml NaOH	Filtered? Y or N	250 Other: 0.45 filtered	Analysis Required
2576	Union outlet	water	5/30/07	2:20pm		1										1	TP, SRP, TSS
2577	Union Inlet	water	5/30/07	2:45pm		1										1	TP, SRP, TSS

Comments:

Transferred by:	Date:	Time:	Sample Condition:	Received by:	Date:	Time:	Temp:
1. Nick Christensen	5.30.07	3:35pm	on ice		5/31/07	1000	
2.							

Please submit the top two copies with your samples. We will return the completed original with your results.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-6488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: July 11, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 06-06-07
Date Sampled: 06-05-07 Reanalyzed

Parameter	School Section 07-2696	Clearwater East 07-2697	Otter 07-2698	Augusta 07-2699	MDL	Method*	Date Analyzed
T-Phosphorus	0.022	0.019	0.013	0.031	0.01	4500:B.5&E	06-25
O-Phosphorus	<0.005	<0.005	<0.005	<0.005	0.005	4500-P:E	06-07
Chlorophyll A	<0.2	<0.2	<0.2	20.3	0.2	10200H	06-19

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DATA
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-2696	101%	100%	---	1.2%
O-Phosphorus	07-2696	94%	96%	---	2.4%
Chlorophyll A	07-2609	---	---	---	0.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-008

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5[illegible]
Fax: (605) 332-

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: July 11, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

REISSUE

LABORATORY NO: 98-56760
Date Received: 06-06-07
Date Sampled: 06-05-07

Parameter	School Section 07-2696	Clearwater East 07-2697	Otter 07-2698	Augusta 07-2699	MDL	Method*	Date Analyzed
T-Phosphorus	0.022	0.019	0.013	0.031	0.01	4500:B.5&E	06-25
O-Phosphorus	<0.005	<0.005	<0.005	<0.005	0.005	4500-P:E	06-07
Chlorophyll A	<0.2	<0.2	<0.2	20.3	0.2	10200H	06-19

MDL - Method Detection Limit
All results are in milligrams per liter.
*Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA		PRECISION DA	
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-2696	101%	100%	---	1.2%
O-Phosphorus	07-2696	94%	96%	---	2.4%
Chlorophyll A	07-2609	---	---	---	0.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-008

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: July 11, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 06-07-07
Date Sampled: 06-06-07

Parameter	Louis 07-2788	Union 07-2789	Betsy 07-2790	Pleasant 07-2791	MDL	Method*	Date Analyzed
T-Phosphorus	0.019	0.022	0.248	0.045	0.01	4500:B.5&E	06-29
O-Phosphorus	<0.005	0.0061	0.079	0.0061	0.005	4500-P:E	06-07
Chlorophyll A	6.41	9.61	4.27	<0.2	0.2	10200H	06-19

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA		PRECISION DATA	
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-2789	91%	91%	---	0.5%
O-Phosphorus	07-2788	95%	99%	---	3.9%
Chlorophyll A	07-2703	---	---	---	2.3%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-007

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: CRWQ
PROJECT: 985760
LABORATORY NUMBER: 2788-2791

DATE RECEIVED: 6-7-07
CARRIER: Courier

CHECKLIST COMPLETED BY: PJ

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?	X	
3. Condition: Intact X Broken		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact N/A Broken		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	N/A	
12. Trip Blank recieved?		X

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 4.0C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: PJ		
17. Metals bottle(s) pH < 2?	N/A	
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?	N/A	
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)	V	

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

Lake

№ 7100

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: Norm Wenck

AIRBILL NO.

PROJ. NO.

PROJ. NAME: CRWD

SAMPLERS (Signature): Ken Watte

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	SAMPLE MATRIX: Soil	Water	Other	Total Phosphorus	Soluble Reactive Phosphorus	Chlorophyll A				REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
1	6/6/07	800		✓	Louisa		✓		✓	✓	✓				
2		900		✓	Union		✓		✓	✓	✓				
3		1000		✓	Betsy		✓		✓	✓	✓				
4		1130		✓	Pleasant		✓		✓	✓	✓				

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Ken Watte	6/6/07	1000					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				6/7/07	1200	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8/

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: July 11, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 06-06-07
Date Sampled: 06-05-07

Parameter	School Section 07-2696	Clearwater East 07-2697	Otter 07-2698	Augusta 07-2699	MDL	Method*	Date Analyzed
T-Phosphorus	0.022	0.0070	<0.005	0.031	0.01	4500:B.5&E	06-25
O-Phosphorus	<0.005	<0.005	<0.005	<0.005	0.005	4500-P:E	06-07
Chlorophyll A	<0.2	<0.2	<0.2	20.3	0.2	10200H	06-19

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DAT
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-2696	101%	100%	---	1.2%
O-Phosphorus	07-2696	94%	96%	---	2.4%
Chlorophyll A	07-2609	---	---	---	0.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-008

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: (RWI)
PROJECT: 995670
LABORATORY NUMBER: 246626699

DATE RECEIVED: 6-6-07
CARRIER: Fed Ex

CHECKLIST COMPLETED BY: D

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?	X	
3. Condition: Intact X Broken		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact N/A Broken		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	N/A	
12. Trip Blank recieved?		X

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 5.0°C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: D		
17. Metals bottle(s) pH < 2?	N/A	
18. Nutrient bottle(s) pH < 2?	X N/A	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)	✓	

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

CRWD Lake

№ 7159

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: Norm Wenck

AIRBILL NO.:

PROJ. NO.:

PROJ. NAME: CRWD

SAMPLERS (Signature): [signature]

SAMPLE MATRIX

REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	Soil	Water	Other	Total Phosphor	Soluble Reactive Phosphorus	Chlorophyll A				
1	6/5/07	1200		—	Schoolsection		—		—	—	—				
2		130		—	Clearwater East		—		—	—	—				
3		250		—	Otter		—		—	—	—				
4		420		—	Augusta		—		—	—	—				

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
[signature]	6507	700					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
			[signature]	6-6-07	1100	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: August 13, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: WES BOLL
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 07-27-07
Date Sampled: 07-26-07

Parameter	Union Outlet 07-4010	Union Inlet 07-4011	MDL	Method*	Date Analyzed
T-Phosphorus	0.038	0.392	0.01	4500:B.5&E	08-02
O-Phosphorus	0.0082	0.013	0.005	4500-P:E	07-27
TSS	5.00	43	4.0	2540D	07-27

MDL - Method Detection Limit
All results are in milligrams per liter.
*Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DATA
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-3369	96%	97%	---	1.3%
O-Phosphorus	07-4008	97%	98%	---	0.9%
TSS	07-3998	---	---	---	4.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-011

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: CLWD
PROJECT: 9856760
LABORATORY NUMBER: 4010-4013

DATE RECEIVED: 7/27/10
CARRIER: Sound Env

CHECKLIST COMPLETED BY: [illegible]

	YES	NO
1. Shipping container in good condition?	✓	
2. Custody seals present on shipping container?	✓	
3. Condition: Intact ✓ Broken		
4. Chain of custody present?	✓	
5. Chain of custody signed when relinquised and recieved?	✓	
6. Chain of custody agrees with sample labels?	✓	
7. Custody seals on sample bottles?		✓
8. Condition: Intact N/A Broken		
9. Samples in proper container/bottle?	✓	
10. Samples intact?	✓	
11. VOA vials have zero headspace?	✓	
12. Trip Blank recieved?		✓

	YES	NO
13. Ice/Frozen Blue Ice present?	✓	
14. Container temperature? 4.0C		
15. All samples recieved within holding time?	✓	
PRESERVATION:		
16. pH check performed by: BS		
17. Metals bottle(s) pH < 2?	NR	
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?	NR	
20. Oil & Grease bottle(s) pH < 2?	/	
21. DRO/418.1 bottle(s) pH < 2?	/	
22. Phenolics bottle(s) pH < 2?	/	
23. Volatiles (VOA) pH < 2? (checked by analyst)	✓	

Client contacted for any reason? YES ____ NO ✓

Person contacted? ____

Date contacted? ____

Contacted by? ____

Regarding? ____

Additional Comments: ____

TETRA TECH, INC.

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: August 14, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 06-29-07
Date Sampled: 06-28-07
Authorization: 06-29-07

Parameter	PLEASANT 07-3357	UNION 07-3358	BETSY 07-3359	MDL	Method*	Date Analyzed
T-Phosphorus	0.038	0.071	0.518	0.01	4500:B.5&E	07-23
O-Phosphorus	<0.005	<0.005	0.338	0.005	4500-P:E	06-29
TSS	3.74	3.20	9.61	4.0	2540D	07-06

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA		PRECISION DATA	
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-3357	97%	104%	---	6.8%
O-Phosphorus	07-3357	95%	94%	---	1.0%
TSS	07-3364	---	---	---	6.1%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\2006\wenck\6760crwd-015

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: CRWD
PROJECT:
LABORATORY NUMBER: 410379

DATE RECEIVED: 6/29/07
CARRIER: Speedee

CHECKLIST COMPLETED BY: OH

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	N/A	
12. Trip Blank recieved?		

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 2.7°C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: OH		
17. Metals bottle(s) pH < 2?		
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO____

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

Lake

№ 7164

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: Norm Wenck

AIRBILL NO.:

PROJ. NO.:

PROJ. NAME: C.R.W.D.

SAMPLERS (Signature): Ken Wetterlund

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	SAMPLE MATRIX: Soil	Water	Other	Total Phosphorus	Soluble Reactive Phosphorus	Chlorophyll A				REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
1	6/28	800		✓	Pleasant		✓		✓	✓	✓				3357
2	6/28	900		✓	Union		✓		✓	✓	✓				3358
3	6/28	1015		✓	Betty		✓		✓	✓	✓				3359

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Ken Wetterlund	6/29	1030					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				6/29/01	1030	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-84

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: August 14, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 06-28-07
Date Sampled: 06-27-07

Parameter	School Section 07-3324	Louisu 07-3325	Clearwater East 07-3326	Otter 07-3327	Augusta 07-3328	MDL	Method*	Date Analyzed
T-Phosphorus	0.029	0.095	0.042	0.034	0.049	0.01	4500:B.5&E	07-23
O-Phosphorus	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	4500-P:E	06-28
Chlorophyll A	<0.2	78.0	8.01	<0.2	20.3	0.2	10200H	07-06

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DAT*
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-3321	99%	102%	---	1.9%
O-Phosphorus	07-3321	94%	96%	---	0.3%
Chlorophyll A	07-3289	---	---	---	0.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-013

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: CLWD
PROJECT: 98576.20
LABORATORY NUMBER: 3324-3328

DATE RECEIVED: 4.28.07
CARRIER: Speedee

CHECKLIST COMPLETED BY: D

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?	Y	
3. Condition: Intact Y Broken		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	Y	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact NA Broken		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	NR	
12. Trip Blank recieved?		Y

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 4.0C		
15. All samples recieved within holding time?	Y	
PRESERVATION		
16. pH check performed by: PS		
17. Metals bottle(s) pH < 2?	NR	
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?	NR	
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)	Y	

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

Lake

№ 7..2

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: Norm Wenck

AIRBILL NO.:

PROJ. NO.:

PROJ. NAME: CRWD

SAMPLERS (Signature):

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	SAMPLE MATRIX: Soil	Water	Other	Total Phosphorus	Soluble Reactive Phosphorus	Chlorophyll a					REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
1	6/27	8:00		—	Schodsection		—		—	—	—					
2		9:40		—	Louisa		—		—	—	—					
3		10:30		—	Clearwater East		—		—	—	—					
4		11:40		—	Otter		—		—	—	—					
5		12:45		—	Augusta		—		—	—	—					

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
	6/27/07	8:30					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				6/28/07	11:20	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: August 14, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 06-28-07
Date Sampled: 06-26-07
Authorization: 06-28-07

Parameter	CR28.2 07-3321	UNION1N 07-3322	WRO.2 07-3323	MDL	Method*	Date Analyzed
T-Phosphorus	0.761	0.175	0.136	0.01	4500:B.5&E	07-23
O-Phosphorus	0.533	0.061	0.051	0.005	4500-P:E	06-28
TSS	<4.00	<4.00	5.00	4.0	2540D	06-28

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DATA
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-3321	99%	102%	---	1.9%
O-Phosphorus	07-3321	94%	96%	---	0.3%
TSS	07-3305	---	---	---	3.1%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\2006\wenck\6760crwd-012

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: CLW
PROJECT: 9857.760
LABORATORY NUMBER: 3321-3323

DATE RECEIVED: 6-28-07
CARRIER: FedEx

CHECKLIST COMPLETED BY: P

	YES	NO
1. Shipping container in good condition?	Y	
2. Custody seals present on shipping container?	Y	
3. Condition: Intact Y Broken		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
Custody seals on sample bottles?		X
8. Condition: Intact NA Broken		
9. Samples in proper container/bottle?	X	
10. Samples intact?	Y	
11. VOA vials have zero headspace?	NA	
12. Trip Blank recieved?		X

	YES	NO
13. Ice/Frozen Blue Ice present?		X
14. Container temperature? 8.0C		
15. All samples recieved within holding time?	Some out	X
PRESERVATION:		
16. pH check performed by: P		
17. Metals bottle(s) pH < 2?	NA	
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?	NA	
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO____

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

Streams

№ 7161

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: Wormwenck

AIRBILL NO.:

PROJ. NO.:

PROJ. NAME: CRWD

SAMPLERS (Signature): Tom Walton

SAMPLE MATRIX

REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	Soil	Water	Other	Total Phosphorus	Soluble Reactive Phosphorus	Total Suspended Solids				
1	6/26/07	1000		✓	CR25.2		✓		✓	✓	✓				
2		1045		✓	Union IN		✓		✓	✓	✓				
3		1045		✓	WRO.2		✓		✓	✓	✓				

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Tom Walton	6/26/07	1500					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				6/27/07	1130	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Maxim Technologies, Inc.®
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8

REPORT OF: WATER ANALYSIS

PROJECT: PULASKI POND ?
MINNESOTA

DATE: August 17, 2001

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: KENT TORVE
PO BOX 249
MAPLE PLAINS, MN 55359

Rebecca

LABORATORY NO: 9856760
Date Received: 08-02-07
Date Sampled: 08-01-07
Authorization: 08-01-07

MB Checked with Tab 12 3/07 Actual value 0.033 mg/L

Parameter	Betsy 07-4148	Union 07-4149	Pleasant 07-4150	MDL	Method*	Date Analyzed
Total Phosphorus	0.148	0.33	0.031	0.01	4500 PB5&E	08-03
Soluble Reactive Phosphorus	0.033	<0.005	<0.005	0.005	4500-PE	08-02
Chlorophyll A	208	4.81	12.3	0.2	10200H	08-05

MDL - Method Detection Limit
All results are in milligrams per liter.
*"Standard Methods for the Examination of Water and Wastewater", 18th edition 1992.

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DATA
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-4149	98%	101%	---	3.7%
Soluble Reactive Phosphorus	07-4128	93%	96%	---	1.9%
Chlorophyll A	07-4148	---	---	---	1.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

MAXIM TECHNOLOGIES, INC.

Virginia VerMulm
Manager

Dan T. Hanson
Chemistry Manager

G:data\wpfiles\dth\2001\6179WNK16

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: CRWD
PROJECT:
LABORATORY NUMBER: 985740

DATE RECEIVED: 8/2/07
CARRIER: speedee

CHECKLIST COMPLETED BY: DK

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	~	
12. Trip Blank recieved?		NA

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 5.2°C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: NH		
17. Metals bottle(s) pH < 2?		
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

Lake Samples

No 7 38

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: Norm Wenck

AIRBILL NO.:

PROJ. NO.:

PROJ. NAME: CRWD

SAMPLERS (Signature): Ken Wattle

SAMPLE MATRIX

REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	Soil	Water	Other	Total Phosphorus	Soluble Reactive Phosphorus	Chlorophyll a					REMARKS
1	8/07	900		✓	Betsy		✓		✓	✓	✓					4/15
2		1030		✓	Union		✓		✓	✓	✓					4/49
3		1130		✓	Pleasant		✓		✓	✓	✓					4/50

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Ken Wattle	8/07	1210					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				8/7/07	1210	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: September 6, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 08-01-07
Date Sampled: 07-31-07

Parameter	School Section 07-4093	Lauisa 07-4094	Clearwater East 07-4095	Otter 07-4096	Augusta 07-4097	MDL	Method*	Date Analyzed
Total Phosphorus	0.033	0.079	0.020	0.013	0.018	0.005	4500-P-B.5&E	08-02
Soluable Reactive Phosphorus	<0.005	<0.005	<0.005	<0.005	0.0066	0.005	4500-PE	08-01
Chlorphyll A	5.87	114	4.27	<0.2	6.94	0.20	10200H	08-05

MDL - Method Detection Limit
All results are in milligrams per liter.
*Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA			PRECISION DATA
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
Total Phosphorus	07-4020	102%	103%	---	0.9%
Soluable Reactive Phosphorus	07-4092	93%	96%	---	2.6%
Chlorphyll A	07-4087	---	---	---	0.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-018

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: CRWA
PROJECT: _____
LABORATORY NUMBER: 925760

DATE RECEIVED: 8/1/07
CARRIER: Speedee

CHECKLIST COMPLETED BY: AH

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
Custody seals on sample bottles?	~~X~~	X
a. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	NA	
12. Trip Blank recieved?		

	YES	NO
13. (Ice)/Frozen Blue Ice present?	X	
14. Container temperature? 4.1 °C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: AH		
17. Metals bottle(s) pH < 2?		
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

Lake Sample

№ 7167

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: Norm Wenck

AIRBILL NO.:

PROJ. NO.:

PROJ. NAME: CRWD

SAMPLERS (Signature):

SAMPLE MATRIX

REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	Soil	Water	Other	Total Phosphorus	Soluble Reactive Phosphorus	Chlorophyll a					REMARKS
1	7/31	1000		—	School section		—		—	—	—					4093
2		1100		—	Lavisa		—		—	—	—					4094
3		1230		—	Clear Water East		—		—	—	—					4095
4		150		—	OTTer		—		—	—	—					4096
5		220		—	Augusta		—		—	—	—					4097

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Kevin Wittrock	7/31	6:00					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				8/1/17	110	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH, INC.

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-537[illegible]
Fax: (605) 332-8

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: September 14, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: WES BOLL
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 08-30-07
Date Sampled: 08-29-07

Parameter	CR28.2 07-4839	Union Inlet 07-4840	Union Outlet 07-4841	WR0.2 07-4842	MDL	Method*	Date Analyzed
T-Phosphorus	0.431	0.155	0.013	0.127	0.01	4500:B.5&E	09-07
O-Phosphorus	0.301	0.081	<0.005	0.084	0.005	4500-P:E	08-30
Total Suspended Solids	10.0	<4.0	<4.0	<4.0	4.0	2540D	08-31

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA		PRECISION DATA	
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-4839	100%	102%	---	1.7%
O-Phosphorus	07-4836	101%	93%	---	7.2%
TSS	07-4793	---	---	---	5.2%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-019

TETRA TECH

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: November 5, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 09-14-07
Date Sampled: 09-13-07

Parameter	Betsy 07-5244	Union 07-5245	Pleasant 07-5246	MDL	Method*	Date Analyzed
T-Phosphorus	0.456	0.044	0.042	0.01	4500:B.5&E	10-08
O-Phosphorus	0.090	<0.005	<0.005	0.005	4500-P:E	09-14
Chlorophyll A	59.6	9.61	21.9	0.2	10200H	09-30

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA		PRECISION DATA	
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-5183	97%	103%	---	5.8%
O-Phosphorus	07-5231	97%	100%	---	3.3%
Chlorophyll A	07-5326	---	---	---	2.1%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck\2007\6760crwd-022

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: (LWI)
PROJECT: 9856760
LABORATORY NUMBER: 5244-5246

DATE RECEIVED: 9.14.07
CARRIER: Fedex

CHECKLIST COMPLETED BY: O

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?	X	
3. Condition: Intact X Broken		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact NA Broken		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	NA	
12. Trip Blank recieved?		X

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 4.0C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: PS		
17. Metals bottle(s) pH < 2?	NA	
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?	NA	
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

Lake samplings

№ 7_1

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: Norm Wenck

AIRBILL NO.:

PROJ. NO.:

PROJ. NAME: CRWD

SAMPLERS (Signature): Ken Wittner

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	SAMPLE MATRIX: Soil	Water	Other	Total Phosphorus	Soluble Reactive Phosphorus	Chlorophyll a					REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
1	9/13	1000			Betsy		—		—	—	—					5244
2	1	1100			Union		—		—	—	—					5245
3	↓	1230			Pleasant		—		—	—	—					5246

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Ken Wittner	9/13	900					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
			CK - IL	9/14/07	1112	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 3[illegible]8

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: November 5, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 09-07-07
Date Sampled: 09-06-07

Parameter	School Section 07-5049	Louisa 07-5050	Clearwater East 07-5051	Otter 07-5052	Augusta 07-5053	MDL	Method*	Date Analyzed
T-Phosphorus	0.047	0.123	0.030	0.020	0.027	0.01	4500:B.5&E	10-02
O-Phosphorus	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	4500-P:E	09-07
Chlorophyll A	6.94	119	11.2	<0.2	20.3	0.2	10200H	09-09

MDL - Method Detection Limit
All results are in milligrams per liter.
*Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA		PRECISION DATA	
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-5041	99%	94%	---	5.8%
O-Phosphorus	07-5052	92%	97%	---	5.2%
Chlorophyll A	07-5018	---	---	---	0.0%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-021

SAMPLE RECEIPT CHECKLIST

CLIENT NAME: Wenck
PROJECT: _____
LABORATORY NUMBER: 98560700

DATE RECEIVED: 9/7/07
CARRIER: Speedee

CHECKLIST COMPLETED BY: DH

	YES	NO
1. Shipping container in good condition?	X	
2. Custody seals present on shipping container?		X
3. Condition: Intact___ Broken___		
4. Chain of custody present?	X	
5. Chain of custody signed when relinquised and recieved?	X	
6. Chain of custody agrees with sample labels?	X	
7. Custody seals on sample bottles?		X
8. Condition: Intact___ Broken___		
9. Samples in proper container/bottle?	X	
10. Samples intact?	X	
11. VOA vials have zero headspace?	N/A	
12. Trip Blank recieved?		N/A

	YES	NO
13. Ice/Frozen Blue Ice present?	X	
14. Container temperature? 1.7°C		
15. All samples recieved within holding time?	X	
PRESERVATION:		
16. pH check performed by: DH		
17. Metals bottle(s) pH < 2?		
18. Nutrient bottle(s) pH < 2?	X	
19. Cyanide bottle(s) pH > 12?		
20. Oil & Grease bottle(s) pH < 2?		
21. DRO/418.1 bottle(s) pH < 2?		
22. Phenolics bottle(s) pH < 2?		
23. Volatiles (VOA) pH < 2? (checked by analyst)		

Client contacted for any reason? YES____ NO X

Person contacted? _____

Date contacted? _____

Contacted by? _____

Regarding? _____

Additional Comments: _____

TETRA TECH, INC.

Lakes and Clear Water Harbor

№ 1170

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: Norm Wenck

AIRBILL NO.:

PROJ. NO.:

PROJ. NAME: CRWD

SAMPLERS (Signature): Kim Wilton

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	SAMPLE MATRIX: Soil	Water	Other	Total Phosphorus	Soluble Reactive Phosphorus	Chlorophyll A	BOD	TSS	TKN		REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
1		800		✓	School Section		✓		—	—	—					5049
2		920		✓	Louisa		✓		—	—	—					5050
3		1030		✓	Clear Water East		✓		—	—	—					5051
4		1130		✓	Otter		✓		—	—	—					5052
5		1200		✓	Augusta		✓		—	—	—					5053
7		130		✓	Clear Water Harbor		✓					—	—	—		5057
					WS007											

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Kim Wilton	9/6/07	730					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				9/7/07	1130	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

TETRA TECH

Tetra Tech
601 East 48th Street North
Sioux Falls, South Dakota 57104-0698
(605) 332-5371
Fax: (605) 332-8488

REPORT OF: WATER ANALYSIS

PROJECT: CRWD
MINNESOTA

DATE: November 7, 2007

REPORTED TO: WENCK ASSOCIATES, INC.
ATTN: REBECCA KLUCKHOHN
1800 PIONEER CREEK CTR
PO BOX 249
MAPLE PLAINS, MN 55359

LABORATORY NO: 98-56760
Date Received: 10-03-07
Date Sampled: 10-02-07

Parameter	CR28.2 07-5727	Union Inlet 07-5728	Union Output 07-5729	WR0.2 07-5730	MDL	Method*	Date Analyzed
T-Phosphorus	0.379	0.277	0.046	0.132	0.01	4500:B.5&E	10-12
O-Phosphorus	0.193	0.011	0.0052	0.087	0.005	4500-P:E	10-03
Chlorophyll A	22.0	57.0	<4.00	<4.00	0.2	10200H	10-05

MDL - Method Detection Limit
All results are in milligrams per liter.
* Standard Methods of Water & Wastewater 18th Edition, 1992

LABORATORY QUALITY CONTROL

		ACCURACY DATA		PRECISION DATA	
Parameter	Sample #	Matrix Spike Percent Recovery	Matrix Spike Duplicate Percent Recovery	Standard Percent Recovery	Relative Percent Difference
T. Phosphorus	07-5160	104%	107%	---	2.0%
O-Phosphorus	07-5128	91%	91%	---	0.0%
Chlorophyll A	07-5128	---	---	---	3.5%

The samples were consumed in the analyses. If you have any questions or comments concerning this report, please feel free to contact us.

TETRA TECH

Virginia VerMulm
QA Manager

Dan T. Hanson
Chemistry Manager

R:data\wpfiles\dth\wenck/2007/6760crwd-023

CRWD STORMS

№ 7.2

Wenck

CHAIN OF CUSTODY RECORD

WENCK ASSOCIATES, INC.
1800 Pioneer Creek Ctr. – P.O. Box 249
Maple Plain, MN 55359-0249
Phone: (763) 479-4200
FAX: (763) 479-4242

FIELD COORDINATOR: Norm Wenck

AIRBILL NO.

PROJ. NO.

PROJ. NAME: CRWD

SAMPLERS (Signature)

Sample I.D.	Date	Time	Comp.	Grab	Sample Description	SAMPLE MATRIX: Soil	Water	Other	T=Total Phosphorus	Soluble Reactive Phosphorus	Total Suspended Solids					REMARKS (Analyses, Detection Limits, Turnaround Time, Preservation, QA/QC, Run/Hold, Previous Data)
1	10207	800		—	CR28.2		—		—	—	—					5727
2	10207	900		—	UNION IN		—		—	—	—					5728
3	10207	950		—	UNION OUT		—		—	—	—					5729
4	10207	1130		—	WR0.2		—		—	—	—					5730

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Reinhardt	10207	830					

Relinquished by: (Signature)	Date	Time	Received for Laboratory by: (Signature)	Date	Time	Sampling/Receipt Comments
				10/3/07	1230	

DISTRIBUTION: Original Accompanies Shipment; Copy to Coordinator Field Files

Appendix G

Field Notes and Measurements

*

Clearwater River Watershed Lake Sampling

Date of Sampling: 6507
Start Time: 1200
End Time:
Sampler(s): KCe

Site Location: School Section

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
70° SE 5 mp
P.C.

Secchi Disk (ft): 8.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
1		23.1		12.9		
		23.1	.	12.9	0.50	.
		23.2	.	12.5	1.00	.
		23.1	.	12.1	2.00	.
		23.1	.	12.1	3.00	.
		23.1	.	12.1	4.00	.
		.	.	.	5.00	.
		.	.	.	6.00	.
		.	.	.	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 6507

Start Time: 1:30

End Time:

Sampler(s):

Site Location: Clearwater East

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):

Measured Depth (ft):

Weather:
720
P.S.

Secchi Disk (ft): 13.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
2		20.5		12.9		
		20.5		13.5	0.50	
		20.5		12.2	1.00	
		20.1		12.2	2.00	
		19.8		12.2	3.00	
		19.4		12.5	4.00	
		19.1		12.5	5.00	
		18.9		12.0	6.00	
		18.1		9.5	7.00	
		17.9		9.0	8.00	
		17.3		7.7	9.00	
		16.8		7.0	10.00	
		16.5		6.3	11.00	
		16.1		4.2	12.00	
		14.9		1.2	13.00	
		13.2		0.5	14.00	
		13.2		0.1	15.00	
		13.0		0.1		

Clearwater River Watershed Lake Sampling

Date of Sampling: 6507
Start Time: 250
End Time:
Sampler(s):

Site Location: Otter
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather: P.C.
175°

Secchi Disk (ft): 10'

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
3		21		11.5		
		20.8		11.9	0.50	
		20.5		11.8	1.00	
		19.5		10.9	2.00	
		19.9		10.5	3.00	
		15.5		11.5	4.00	
		13.5		4.1	5.00	
		11.0		3.6	6.00	
		9.5		3.5	7.00	
		7.7		2.8	8.00	
		8.2		1.5	9.00	
		7.2		1.1	10.00	
		7.1		0.5	11.00	
		6.8		0.2	12.00	
		6.5		0.2	13.00	
		6.8		0.2	14.00	
		6.5		0.2	15.00	
		6.5		0.2		

Clearwater River Watershed Lake Sampling

Date of Sampling: C501

Start Time: 420

End Time:

Sampler(s):

Site Location: Augusta

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):

Measured Depth (ft):

Weather: 75° windy PS.

Secchi Disk (ft): 3.5 FT

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		22.2		17.5		
4		21.9		14.5	0.50	
		21.1		12.8	1.00	
		19.7		8.1	2.00	
		16.4		5.5	3.00	
		13.3		4.2	4.00	
		11.2		4.2	5.00	
		10.0		3.1	6.00	
		9.1		0.5	7.00	
		8.1		1.0	8.00	
		7.1		0.5	9.00	
		6.5		0.5	10.00	
		6.5		0.2	11.00	
		6.5		0.2	12.00	
		5.9		0.2	13.00	
		5.6		0.2	14.00	
		5.0		0.1	15.00	
		5.0		0.1		
		5.0		0.1		
		4.9		0.1		
		4.9		0.1		
		4.9		0.1		
		4.4		0.1		

Clearwater River Watershed Lake Sampling

Date of Sampling: 6607 Site Location: Louisa

Start Time: 800

End Time:

Sampler(s):

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):

Measured Depth (ft):

Weather: P.C. Windy 68°

Secchi Disk (ft): 4.5

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		21.0		10.5		
5	6607 800	20.2		10.5	0.50	
		20.2		10.2	1.00	
		20.1		10.2	2.00	
		19.9		10.2	3.00	
		19.5		9.5	4.00	
		19.5		9.5	5.00	
		18.2		9.7	6.00	
		17.5		7.2	7.00	
		16.5		5.1	8.00	
		16.0		4.3	9.00	
		15.5		1.5	10.00	
		15.4		1.3	11.00	
		14.2		0.5	12.00	
		14.0		0.5	13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 6607
Start Time: 800
End Time:
Sampler(s):

Site Location: Pleasant
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
Cloudy 65°

Secchi Disk (ft): 10.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		20.8		13.1		
1		20.5	.	13.0	0.50	.
		20.5	.	13.0	1.00	.
		20.5	.	12.1	2.00	.
		19.9	.	12.0	3.00	.
		19.5	.	12.0	4.00	.
		19.2	.	11.9	5.00	.
		19.0	.	11.9	6.00	.
		18.5	.	10.5	7.00	.
		16.9	.	9.2	8.00	.
		16.9	.	9.0	9.00	.
		16.5		7.4	10.00	
		16.2		7.2	11.00	
		16.0		6.6	12.00	
		16.0		6.5	13.00	
		15.1		4.0	14.00	
		15.1		0.5	15.00	
		14.9		0.1		
		14.0		0.1		
		13.1		0.1		.
		13.0		0.1		

Clearwater River Watershed Lake Sampling

Date of Sampling: 6607
Start Time: 900
End Time:
Sampler(s):

Site Location: UNION

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
Cloudy
65°

Secchi Disk (ft): 5.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
2	6607 900	21.5		13.1		
		21.2		12.0	0.50	
		21.2		12.0	1.00	
		19.5		12.5	2.00	
		19.6		9.5	3.00	
		19.2		9.5	4.00	
		18.2		8.9	5.00	
		15.4		3.1	6.00	
		13.2		0.1	7.00	
		9.9		0.1	8.00	
					9.00	
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 6607
Start Time: 1000
End Time:
Sampler(s): KW

Site Location: Betsy
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
Cloudy
65°

Secchi Disk (ft): 3.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
S		19.5		12.0		
		19.5	.	11.1	0.50	.
		18.2	.	10.2	1.00	.
		18.2	.	10.2	2.00	.
		18.0	.	11.2	3.00	.
		16.9	.	10.2	4.00	.
		16.5	.	9.2	5.00	.
		15.1	.	4.5	6.00	.
		.	.	.	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 62607
Start Time: 800
End Time:
Sampler(s): [illegible]

Site Location: School section

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
Sunny
65°

Secchi Disk (ft): 8.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
1	62707	21.5		11.2		
		21.5	.	11.0	0.50	.
		20.2	.	8.9	1.00	.
		18.9	.	8.9	2.00	.
		18.9	.	8.5	3.00	.
		.	.	.	4.00	.
		.	.	.	5.00	.
		.	.	.	6.00	.
		.	.	.	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 62607
Start Time: 920
End Time:
Sampler(s): KC

Site Location: Louisa
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
sunny
65°

Secchi Disk (ft): 4.5

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		22.1		1.52		
2		22.1		1.51	0.50	
		21.5		1.44	1.00	
		21.1		1.45	2.00	
		21.0		1.45	3.00	
		16.2		5.1	4.00	
		15.1		4.2	5.00	
		13.5		4.0	6.00	
		12.1		0.5	7.00	
		9.5		1.2	8.00	
		9.0		1.3	9.00	
		7.1		1.3	10.00	
		7.0		1.2	11.00	
		7.0		1.1	12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 6 28 07
Start Time: 10 30
End Time:
Sampler(s):

Site Location: Clearwater East

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather: Sunny
65° windy From N.W.

Secchi Disk (ft): 4.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
3	10:30	24.0		13.8		
		24.1		14.2	0.50	
		23.9		12.5	1.00	
		23.8		11.1	2.00	
		23.6		9.4	3.00	
		22.5		8.1	4.00	
		22.1		6.1	5.00	
		21.5		5.3	6.00	
		20.9		2.8	7.00	
		20.1		2.0	8.00	
		19.5		1.1	9.00	
		18.9		0.5	10.00	
		18.1		0.2	11.00	
		15.9		0.2	12.00	
		15.2		0.2	13.00	
		15.1		0.2	14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 6/28/07
Start Time: 1140
End Time:
Sampler(s):

Site Location: Otter
Site Description
Chain of Custody: —

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
Sunny 68°, windy 15 To 20 From N.W.

Secchi Disk (ft): 12'5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
4		22.1		11.1		
		22.1		12.1	0.50	
		22.0		12.1	1.00	
		22.0		12.0	2.00	
		22.0		11.1	3.00	
		20.5		10.9	4.00	
		19.4		10.4	5.00	
		19.5		8.2	6.00	
		19.5		8.0	7.00	
		19.2		5.9	8.00	
		18.9		5.9	9.00	
		18.9		5.0	10.00	
		17.1		3.1	11.00	
		15.2		2.0	12.00	
		13.1		1.1	13.00	
		14.9		0.5	14.00	
		14.5		0.3	15.00	
		14.5		0.3		
		14.2		0.2		
		14.1		0.2		
		14.1		0.2		
		14.0				

Clearwater River Watershed Lake Sampling

Date of Sampling: 6/27/07
Start Time: 1245
End Time:
Sampler(s): KCJ

Site Location: Augusta
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
Sunny Windy
68° NW 20-25

Secchi Disk (ft): 5'

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
5		25.1		17.5		
		25.0		16.8	0.50	
		25.0		16.8	1.00	
		25.0		16.5	2.00	
		22.5		16.0	3.00	
		22.5		15.9	4.00	
		20.0		15.8	5.00	
		19.5		14.8	6.00	
		18.2		7.1	7.00	
		16.1		7.0	8.00	
		16.0		2.5	9.00	
		15.1		2.5	10.00	
		14.8		1.9	11.00	
		14.8		1.5	12.00	
		13.9		1.0	13.00	
		13.5		0.6	14.00	
		11.5		0.5	15.00	
		11.8		0.5		
		11.8		0.5		
		11.5		0.5		
		11.2		0.5		
		10.4		0.5		
		10.5		0.5		
		10.0		0.5		
		10.0		0.5		
		10.0		0.5		
		10.0		0.5		

Clearwater River Watershed Lake Sampling

Date of Sampling: 6/29/07
Start Time: 800
End Time:
Sampler(s): KW

Site Location: Pleasant

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
sunny 56°

Secchi Disk (ft): 6.5

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
1		21.1		12.5		
		21.1	.	13.2	0.50	.
		20.2	.	12.8	1.00	.
		20.2	.	11.9	2.00	.
		20.0	.	11.9	3.00	.
		19.5	.	11.8	4.00	.
		19.6	.	10.1	5.00	.
		18.5	.	9.9	6.00	.
		18.0	.	5.0	7.00	.
		16.5	.	0.3	8.00	.
		16.0	.	0.2	9.00	.
		15.2		0.2	10.00	
		14.9		0.2	11.00	
		13.5		0.2	12.00	
		13.3		0.2	13.00	
		12.8		0.2	14.00	
		12.8		0.2	15.00	
		12.5		0.2		
		11.9		0.2		
		11.5		0.2		

Clearwater River Watershed Lake Sampling

Date of Sampling: 6/29/07
Start Time: 900
End Time:
Sampler(s): KW

Site Location: UNION
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather: Sunny 56°

Secchi Disk (ft): 9.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		21.0		12.5		
2		21.2	.	12.3	0.50	.
		21.1	.	12.2	1.00	.
		20.0	.	11.9	2.00	.
		19.5	.	11.5	3.00	.
		19.8	.	8.4	4.00	.
		13.2	.	4.5	5.00	.
		12.5	.	1.1	6.00	.
		10.0	.	1.0	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 7/29/07
Start Time: 1015
End Time:
Sampler(s): KW

Site Location: Betsy
Site Description
Chain of Custody: ~

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:

Secchi Disk (ft): 2.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		23.5		18.2		
3		23.0		1.60	0.50	
		22.0		1.61	1.00	
		22.1		14.0	2.00	
		20.2		11.1	3.00	
		20.0		9.2	4.00	
		19.0		0.9	5.00	
		17.5		0.5	6.00	
		17.0		6.5	7.00	
					8.00	
					9.00	
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 73107
Start Time: 10:00
End Time:
Sampler(s): KW

Site Location: Schoolsection
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
Sunny
85°

Secchi Disk (ft): 4.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		29.8		15.9		
1	73107	27.2		1.42	0.50	
		27.1		1.40	1.00	
		19.1		1.20	2.00	
		19.0		1.22	3.00	
					4.00	
					5.00	
					6.00	
					7.00	
					8.00	
					9.00	
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 7 31 07
Start Time: 11 00
End Time:
Sampler(s): KW

Site Location: Louisa
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
Sunney
85°
Wind From 5 To 10 S.W.

Secchi Disk (ft): 2.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		29		17.1		
2		28.1	.	15.2	0.50	.
		25.5	.	3.8	1.00	.
		23.2	.	1.5	2.00	.
		20.1	.	1.2	3.00	.
		17.2	.	1.1	4.00	.
		15.8	.	1.2	5.00	.
		13.1	.	1.0	6.00	.
		11.1	.	1.2	7.00	.
		10.2	.	1.1	8.00	.
		9.0	.	1.2	9.00	.
		8.0		1.2	10.00	
		7.1		1.3	11.00	
		7.0		1.2	12.00	
		7.2		1.3	13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 7 31 07
Start Time: 1230
End Time:
Sampler(s):

Site Location: Clear Water East
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:

Secchi Disk (ft): 5.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
3		28.6		12.5		
		26.5		1.32	0.50	
		26.5		13.8	1.00	
		24.1		13.5	2.00	
		24.1		13.2	3.00	
		24.7		7.2	4.00	
		23.1		2.1	5.00	
		22.5		0.8	6.00	
		22.0		0.6	7.00	
		21.5		0.5	8.00	
		20.5		0.6	9.00	
		19.2		0.5	10.00	
		17.5		0.6	11.00	
		15.1		0.6	12.00	
		13.2		0.7	13.00	
		14.1		0.7	14.00	
		13.2		0.6	15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 73107
Start Time: 130
End Time:
Sampler(s): KW

Site Location: OTTer
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:

Secchi Disk (ft): 5.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		24.9		11.8		
		23.5	.	11.9	0.50	.
		26.5	.	10.5	1.00	.
		23.5	.	12.1	2.00	.
		19.5	.	11.2	3.00	.
		14.1	.	8.2	4.00	.
		12.5	.	7.1	5.00	.
		10.1	.	1.8	6.00	.
		9.5	.	1.4	7.00	.
		8.3	.	1.4	8.00	.
		7.8	.	1.3	9.00	.
		7.2		1.3	10.00	
		6.8		1.3	11.00	
		7.0		1.3	12.00	
		7.0		1.3	13.00	
		6.9		1.3	14.00	
		6.9		1.2	15.00	
		6.7		1.2		
		6.2		1.2		

Clearwater River Watershed Lake Sampling

Date of Sampling: 7 31 07
Start Time: 220
End Time:
Sampler(s): KW

Site Location: Augusta
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
Sunny
85°

Secchi Disk (ft): 6'5"

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
5		26.1		1.22	0.50	
		261		1.21	1.00	
		259		13.2	2.00	
		255		13.1	3.00	
		255		1.25	4.00	
		2.12		125	5.00	
		201		10.0	6.00	
		195		2.2	7.00	
		194		2.2	8.00	
		185		2.2	9.00	
		180		1.9	10.00	
		152		1.9	11.00	
		141		1.9	12.00	
		140		1.0	13.00	
		140		0.6	14.00	
		132		0.6	15.00	
		132		0.6	16	
		125		0.6	17	
		125		0.6	18	
		120		0.6	19	
		120		0.6	20	
		119		0.6	21	
		119		0.6	22	
		110		0.6	23	
		110		0.6	24	
		113		0.6	25	

Clearwater River Watershed Lake Sampling

Date of Sampling: ~~900~~ 7/31/07
Start Time: 900
End Time:
Sampler(s): KW

Site Location: Betsy
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
Sunny
70°

Secchi Disk (ft): 1' 1"

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		27.2		16.5		
		27.1		13.8	0.50	
		26.1		1.3	1.00	
		25		0.8	2.00	
		22.8		0.8	3.00	
		21.9		0.8	4.00	
		21.6		0.6	5.00	
		21.5		0.6	6.00	
		18.9		0.6	7.00	
		18.5		0.6	8.00	
					9.00	
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 8107
Start Time: 10.30
End Time:
Sampler(s):

Site Location: UNION

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather: sunny 80°

Secchi Disk (ft):

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		22°		11.5		
		22.1		11.2	0.50	
		21.5		10.9	1.00	
		21.5		10.5	2.00	
		20.1		9.9	3.00	
		17.9		1.2	4.00	
		15.1		1.1	5.00	
		13.5		0.8	6.00	
		11.0		0.8	7.00	
					8.00	
					9.00	
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 8 10 07
Start Time: 1130
End Time:
Sampler(s): KW

Site Location: Pleasant
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather: 85°
windy S.W. 15-20

Secchi Disk (ft): 4.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		26.8		13.6		
		26.8		13.7	0.50	
		26.6		13.8	1.00	
		26.5		13.5	2.00	
		26.1		13.2	3.00	
		24.9		2.2	4.00	
		23.2		1.1	5.00	
		23.1		0.7	6.00	
		21.3		0.6	7.00	
		21.3		0.6	8.00	
		20.4		0.6	9.00	
		19.2		0.6	10.00	
		16.8		0.6	11.00	
		14.2		0.6	12.00	
		14.2		0.6	13.00	
		14.2		0.6	14.00	
		13.4		0.6	15.00	
		13.2		0.5		
		13.1		0.5		
		13.2		0.5		

Clearwater River Watershed Lake Sampling

Date of Sampling: 9507
Start Time: 800
End Time:
Sampler(s): KW

Site Location: School section

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
81°
SUNNY

Secchi Disk (ft): 4½

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		25.1		12.2		
		250	.	12.1	0.50	.
		222	.	11.5	1.00	.
		19.9	.	8.5	2.00	.
		19.2	.	8.4	3.00	.
		19.0	.	8.2	4.00	.
		.	.	.	5.00	.
		.	.	.	6.00	.
		.	.	.	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 9507
Start Time: 930
End Time:
Sampler(s): KW

Site Location: Louisa
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather: Windy 82°

Secchi Disk (ft): 3'

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		26.1		11.2		
		26.1		11.2	0.50	
		25.9		10.9	1.00	
		25.4		10.8	2.00	
		19.2		10.8	3.00	
		14.1		5.2	4.00	
		12.2		1.8	5.00	
		11.9		1.5	6.00	
		10.5		1.5	7.00	
		10.4		1.2	8.00	
		10.4		1.1	9.00	
		10.2		1.1	10.00	
		9.9		1.0	11.00	
		9.8		1.0	12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 9507
Start Time: 10 30
End Time:
Sampler(s): KW

Site Location: Clear Water East
Site Description
Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather: Windy 82°
Sunny

Secchi Disk (ft): 5'

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
3	9507	25		1.5:1		
		24.9		14.9	0.50	
		24.9		14.8	1.00	
		24.1		14.2	2.00	
		23.8		11.8	3.00	
		22.2		8.2	4.00	
		21.9		7.2	5.00	
		21.9		6.1	6.00	
		21.5		4.2	7.00	
		21.2		3.8	8.00	
		20.9		1.3	9.00	
		19.2		1.1	10.00	
		17.2		1.1	11.00	
		15 3		1.1	12.00	
		14.9		0.9	13.00	
		15.2		0.9	14.00	
		15 8		0.9	15.00	
		14.8		0.9		
		14.8		0.9		

Clearwater River Watershed Lake Sampling

Date of Sampling: 9.507
Start Time: 1130
End Time:
Sampler(s): KW

Site Location: Otter

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:

Secchi Disk (ft): 6½

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
4		24.1		12.8		
		23.9	.	12.8	0.50	.
		23.8	.	12.2	1.00	.
		23.1	.	12.6	2.00	.
		22.2	.	12.5	3.00	.
		17.1	.	11.1	4.00	.
		13.4	.	1.3	5.00	.
		11.5	.	1.1	6.00	.
		10.2	.	1.1	7.00	.
		9.5	.	1.0	8.00	.
		9.1	.	1.0	9.00	.
		8.8		1.0	10.00	
		8.2		0.9	11.00	
		8.0		0.8	12.00	
		7.9		0.8	13.00	
		7.9		0.8	14.00	
		7.9		0.7	15.00	
		7.8		0.8		
		7.8		0.8		

Clearwater River Watershed Lake Sampling

Date of Sampling: 9/5/07
Start Time:
End Time:
Sampler(s):

Site Location: Augusta

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
windy 82°
Sunny

Secchi Disk (ft): 6.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		25.5		15.2		
		25.5		15.5	0.50	
		25.2		15.2	1.00	
		25.2		15.0	2.00	
		22.5		15.8	3.00	
		21.2		15.0	4.00	
		21.9		15.0	5.00	
		21.9		14.8	6.00	
		18.1		9.5	7.00	
		17.9		2.9	8.00	
		15.2		7.5	9.00	
		15.0		1.2	10.00	
		14.9		0.5	11.00	
		14.5		0.2	12.00	
		14.5		0.2	13.00	
		12.1		0.2	14.00	
		11.5		0.2	15.00	
		10.4		0.2	16	
		10.0		0.2	17	
		10.0		0.2	18	
		9.5		0.2	19	
		9.4		0.2	20	
		9.0		0.2	21	
		9.0		0.2	22	
		8.9		0.2	23	
		8.8		0.2	24	
		8.8		0.2	25	
		8.8		0.2	26	

Clearwater River Watershed Lake Sampling

Date of Sampling: 9/5/07

Start Time:

End Time:

Sampler(s):

Site Location: Pleasant

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):

Measured Depth (ft):

Weather: 80°

Secchi Disk (ft): 7.2

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		25.8		14.2		
		25.8	.	14.2	0.50	.
		25.5	.	13.9	1.00	.
		25.4	.	13.9	2.00	.
		25.5	.	13.5	3.00	.
		24.2	.	12.1	4.00	.
		24.2	.	12.1	5.00	.
		21.5	.	12.0	6.00	.
		20.2	.	11.9	7.00	.
		18.1	.	11.8	8.00	.
		15.2	.	5.2	9.00	.
		14.1		3.3	10.00	
		14.2		1.1	11.00	
		12.2		0.5	12.00	
		12.2		0.5	13.00	
		11.9		0.5	14.00	
		11.9		0.5	15.00	
		11.8		0.5		
		11.3		0.5		

Clearwater River Watershed Lake Sampling

Date of Sampling: 9/5/07

Start Time:

End Time:

Sampler(s):

Site Location: Betsy

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):

Measured Depth (ft):

Weather:

80 sunny

Secchi Disk (ft): 2.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		24.1		17.2		
		25.8	.	16.5	0.50	.
		25.5	.	16.4	1.00	.
		24.9	.	9.1	2.00	.
		24.5	.	8.2	3.00	.
		21.8	.	4.1	4.00	.
		21.0	.	0.5	5.00	.
		18.0	.	0.2	6.00	.
		18.2	.	0.2	7.00	.
		17.0	.	0.2	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 9/5/07

Start Time:

End Time:

Sampler(s):

Site Location: UNION

Site Description

Chain of Custody:

Comments:

Site Coordinates:

Expected Depth (ft):

Measured Depth (ft):

Weather:

81° Sunny

Secchi Disk (ft):

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		24.1		14.1		
		24.0	.	14.0	0.50	.
		23.9	.	14.0	1.00	.
		23.8	.	11.3	2.00	.
		20.0	.	10.5	3.00	.
		17.1	.	8.1	4.00	.
		16.9	.	2.1	5.00	.
		14.2	.	0.3	6.00	.
		14.1	.	0.13	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Clearwater River Watershed Lake Sampling

Date of Sampling: 5/25/07
Start Time: 1200
End Time: 1225
Sampler(s): Jeff

Site Location: Henshaw Lake
Site Description: LHE01
Chain of Custody:

Comments: water is green with algae, sparse submerged macrophytes. ~~[illegible]~~ looks like curly leaf and coontail / pondweed

Site Coordinates: 45 11.919 / 94 02.790

Expected Depth (ft): 4.0
Measured Depth (ft): 7.0

Weather: sunny, sparse clouds

Secchi Disk (ft): 0.75ft

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/l)	Depth (m)	pH (S.U.)
1205	5/25/07	16.56	140	8.79/89.6	0.50	9.06
		16.40	129	7.83/79.4	1.00	9.01
		15.52	136	6.97/70.7	1.5 ~~2.00~~	8.78
		15.51	135	6.77/66.2	2.0 ~~3.00~~	8.96
		.	.	.	4.00	.
		.	.	.	5.00	.
		.	.	.	6.00	.
		.	.	.	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Data Set: T/0002/108/Data/2007 Monitoring Data
Entered By/Date: WB 7/12/07
QA/QC By/Date: WB 11/16/07

Clearwater River Watershed Lake Sampling

Date of Sampling: 6/29/07
Start Time: 11:35
End Time:
Sampler(s): WB

Site Location: LHE01
Site Description: Henshaw Lk
Chain of Custody:

Comments:
- Water is very green with algae
- Some algal scums near shore
- thick beds of sago pondweed on shoreline fringe (~150 ft)

Secchi Disk (ft): 0.5

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft): 6.6

Weather: 75°, Sunny
Calm

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (ft)	pH (S.U.)	
LHE01T	11:50	~~22.96~~	.239	6.97	0.5	9.11	
		22.05	.242	4.03	1.0	8.96	
		22.03	.242	4.04	~~2.0~~ 1.5	~~8~~ 9.1	
LHE01B	12:00	22.02	.243	3.55	~~3.0~~ 2.0	~~8~~ 8.84	BTM
		.	.	.	4.0	.	
		.	.	.	5.0	.	
		.	.	.	6.0	.	
		.	.	.	7.0	.	
		.	.	.	8.0	.	
		.	.	.	9.0	.	
					10.0		
					11.0		
					12		
					13		
					14		
					15		
		WB	7/12/07				
		WB	11/16/07				

Clearwater River Watershed Lake Sampling

Date of Sampling: 7/27/07
Start Time: 11:05
End Time:
Sampler(s): WB

Site Location: LHE01
Site Description: Henshaw Lk
Chain of Custody:

Comments:
~water is very green
-much algae
-aquatic vegetation (Elodea pondweed) abundant near shore

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather: 75°, Sunny
N wind 10-15 mph

Secchi Disk (ft): 0.5'

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/l)	Depth (m)	pH (S.U.)
LHE01T	11:15	25.39	.241	6.16	0.50	9.44
		25.37	.241	5.87	1.00	9.43
LHE01B	11:20	25.36	.241	5.69	~~1.00~~ 1.5	9.41
		24.89	.244	4.42	3.00 2	9.28
		.	.	.	4.00	.
		.	.	.	5.00	.
		.	.	.	6.00	.
		.	.	.	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	
		WB 10/7/07				
		WB 11/16/07				

Clearwater River Watershed Lake Sampling

Date of Sampling: 8/24/07
Start Time: 10:50
End Time:
Sampler(s): WB

Site Location: LHE01
Site Description: Henshaw
Chain of Custody:

Comments:
~water is green with algae
-abundant sago pondweed near shore

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
70°, sunny
N wind 5 mph

Secchi Disk (ft): 0.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/l)	Depth (m)	pH (S.U.)
LHE01T	8/24 11:00	20.54	282	14.63	0.50	9.91
		19.85	282	13.08	1.00	9.80
LHE01B	11:10	19.55	285	10.07	~~2.00~~ 1.5	9.59
		.	.	.	3.00	.
		.	.	.	4.00	.
		.	.	.	5.00	.
		.	.	.	6.00	.
		.	.	.	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	
				WB 11/17/07		

Clearwater River Watershed Lake Sampling

Date of Sampling: 05/25/07
Start Time: 0930
End Time: ~~0925~~ 0920
Sampler(s): JeH + A

Site Location: Cedar Lake
Site Description: LCE001
Chain of Custody:

Comments:

Site Coordinates: 45 16.353
94 09.966

Expected Depth (ft): 100ft
Measured Depth (ft): 96.4

Weather: sunny 65°F, light Breeze

Secchi Disk (ft): 11.5

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/l)	Depth (m)	pH (S.U.)
		16.17	346.0	9.24/104.2	0.50	8.50
		16.11	346.0	9.26/104.1	1.00	8.50
		16.10	346.0	9.24/103.5	2.00	8.50
		16.07	346.0	9.18/103.4	3.00	8.50
		16.06	346.0	9.12/102.6	4.00	8.50
		16.05	346.0	9.11/102.5	5.00	8.49
		15.97	346.0	9.01/101.3	6.00	8.48
		15.84	346.0	8.94/100.6	7.00	8.47
		15.67	351	8.86/99.3	8.00	8.44
		15.60	352	8.86/99.1	9.00	8.40
		15.55	346.0	8.17/77.4	10.00	8.15
		7.87	346.5	8.11/71.3	11.00	7.99
WB 7/12/07		6.54	346.5	8.16/70.2	12.00	7.96
		7.16	346.6	8.12/67.3	13.00	7.85
INB 11/16/07		6.94	346.6	8.11/66.0	14.00	7.86
		6.65	346.7	7.75/63.2	15.00	7.83
		6.51	346.7	7.72/62.4	16.00	7.82
		6.43	346.9	7.70/62.6	17.0	7.79
		6.37	346.6	7.61/60.0	18.0	7.76
		6.32	346.6	6.90/56.6	19.0	7.75
		6.26	346.9	6.68/55.2	20.0	7.74
		6.27	346.7	6.77/54.6	21.0	7.73
		6.21	346.4	6.70/54.1	22.0	7.73
		6.26	346.4	6.68/54.0	23.0	7.73
		6.23	346.9	6.72/54.3	24.0	7.73
		6.21	346.6	6.67/55.7	25.0	7.72
		6.19	346.5	7.03/56.6	26.0	7.74
		6.16	346.6	6.86/55.4	27.0	7.73
		6.17	346.4	6.76/54.6	28.0	7.72
		6.16	346.9	6.71/54.0	29.0	7.72
		6.17	346.9	6.70/54.1	30.0	7.72
Out of cable →		6.10	341	6.32/51.0	31.0	7.07

Clearwater River Watershed Lake Sampling

Date of Sampling: 6/29/07
Start Time: 8:40
End Time:
Sampler(s): WB

Site Location: LCE01
Site Description: Cedar Lk
Chain of Custody:

Comments:
- Water is green in color
- Suspended algae in water
- Curly leaf PW is dying near shoreline

Secchi Disk (ft): 3.0

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft): ~~14.3~~ 96'

Weather:
70°, Sunny
Calm

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (ft)	pH (S.U.)
LCE01T	6/29/07 9:00	23.63	.351	8.58	0.5	8.48
		23.53	.352	8.40	1.0	8.48
		23.47	.350	8.24	2.0	8.47
		23.45	.352	7.99	3.0	8.46
		23.43	.353	7.91	4.0	8.45
		23.40	.353	7.83	5.0	8.45
		23.30	.354	7.40	6.0	8.42
		21.83	.364	2.65	7.0	8.01
		19.20	.368	1.35	8.0	7.86
		16.86	.369	1.93	9.0	7.80
WB	7/12/07	14.76	369	2.29	10.0	7.76
WB	11/16/07	12.11	369	2.70	11.0	7.70
		10.12	370	2.89	12	7.67
		8.36	371	2.90	13	7.65
		7.63	370	3.10	14	7.62
		7.11	371	2.79	15	7.58
		6.80	372	2.30	16	7.56
		6.73	372	2.07	17	7.55
		6.69	372	2.04	18	7.53
		6.63	372	2.10	19	7.53
		6.57	373	1.98	20	7.51
		6.51	373	1.89	21	7.51
		6.47	374	1.64	22	7.50
		6.43	374	1.57	23	7.50
		6.38	374	1.40	24	7.49
		6.36	375	1.16	25	7.48
		6.34	376	0.81	26	7.48
		6.31	377	0.67	27	7.47
		6.31	377	0.47	28	7.46
		6.30	377	0.43	29	7.46
LCE01B 6/29/07 9:15		6.28	378	0.38	30	7.45 BTM

Clearwater River Watershed Lake Sampling

Date of Sampling: 7/27/07
Start Time: 8:40
End Time:
Sampler(s): WB

Site Location: LCE01
Site Description: Cedar Lk
Chain of Custody:

Comments:
- windy
could not anchor in deepest part of hole
- Water slightly green in color

Site Coordinates:

Expected Depth (ft): 31m
Measured Depth (ft): 25m

Weather: Sunny, N wind, 0 mph

Secchi Disk (ft): 3

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/l)	Depth (m)	pH (S.U.)
LCE01T	8:45	26.84	.356	8.71	0.50	8.84
		26.25	.356	8.17	1.00	8.83
		26.24	.356	8.18	2.00	8.83
		26.24	.357	8.17	3.00	8.83
		26.22	.356	8.16	4.00	8.82
		24.26	.362	6.59	5.00	8.61
		23.74	.364	5.01	6.00	8.23
		22.95	.368	3.17	7.00	8.07
		21.66	.372	0.27	8.00	7.87
		17.79	.382	0.12	9.00	7.79
		15.07	.386	0.07	10.00	7.75
		12.49	.388	0.03	11.00	7.73
		11.18	.390	0.03	12.00	7.71
		8.80	.390	0.03	13.00	7.65
		7.94	.390	0.01	14.00	7.62
		7.32	.388	0.00	15.00	7.60
		7.10	.389	0	16	7.59
		6.97	.389	0	17	7.58
		6.91	.389	0	18	7.58
		6.82	.389	0	19	7.58
		6.79	.390	0	20	7.58
		6.76	.390	-0.04	21	7.58
		6.75	.390	-0.04	22	7.58
		6.72	.390	-0.07	23	7.58
		6.71	.390	-0.08	24	7.58
LCE01B	8:55	6.64	.397	-0.08	25	7.37

WB 11/17/07

Clearwater River Watershed Lake Sampling

Date of Sampling: 8/24/07
Start Time: 8:15
End Time:
Sampler(s): WB

Site Location: LCE01
Site Description: Cedar Lk
Chain of Custody:

Comments: water has slight green tint

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft): 92.5

Weather: 65°, Sunny
5mph N wind

Secchi Disk (ft): 5.0

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/l)	Depth (m)	pH (S.U.)
LCE01T	8/24/07 8:30	21.52	.345	8.51	0.50	8.89
		21.52	.345	8.50	1.00	8.89
		21.51	.345	8.52	2.00	8.89
		21.52	.346	8.50	3.00	8.89
		21.29	.349	6.90	4.00	8.69
		21.26	.349	6.44	5.00	8.65
		21.20	.350	6.33	6.00	8.62
		21.09	.350	5.82	7.00	8.57
		20.68	.355	4.67	8.00	8.42
		19.68	.367	2.19	9.00	8.15
		14.51	.396	0.41	10.00	7.80
		11.97	.397	0.20	11.00	7.77
		10.58	.397	0.07	12.00	7.75
		9.15	.396	0.01	13.00	7.72
		8.61	.397	0.01	14.00	7.70
		8.30	.398	-0.03	15.00	7.68
		8.01	.398	-0.04	16	7.66
		7.77	.398	-0.06	17	7.65
		7.63	.398	-0.06	18	7.65
		7.48	.398	-0.07	19	7.64
		7.15	.399	-0.06	20	7.63
		7.13	.399	-0.08	21	7.62
		7.10	.399	-0.08	22	7.62
		7.06	.398	-0.08	23	7.62
		6.95	.398	-0.09	24	7.62
		6.95	.399	-0.11	25	7.62
		6.94	.399	-0.11	26	7.61
		6.93	.399	-0.11	27	7.61
LCE01B	8/24/07 8:45	6.90	.399	-0.11	28	7.61
		6.88	.400	-0.11	29	7.60 Bottom

Clearwater River Watershed Lake Sampling

Date of Sampling: 5/25/07
Start Time: 1110
End Time: 1140
Sampler(s): JA ffM

Site Location: Albion lake
Site Description: LAL01
Chain of Custody:

Comments: cattails weak edge of lake, not really very submergent veg. in main body of lake (along on anchor)

Site Coordinates: 45 13.192
94 04.254
Expected Depth (ft): 6
Measured Depth (ft): 6.3

Weather: Sunny, to partly cloudy slight Breeze, 65°F

Secchi Disk (ft): 3.75 ft

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/l)	Depth (m)	pH (S.U.)
	5/25/07 1115	17.32	399	9.65/101.1	0.50	8.51
		17.00	396	9.73/100.7	1.00	8.53
		16.56	395	9.51/101.0	1.5 ~~2.00~~	8.57
		16.78	414	5.74/50.7	2 ~~3.00~~	7.52
		16.26	415	~~[illegible]~~	2.25 ~~4.00~~	7.65
	.	.	.	1.22/11.5	5.00	.
		.	.	.	6.00	.
		.	.	.	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	
	Data Entry					
	Entered By/Date	WB	7/12/07			
	QA/QC By/Date	WB	7/16/07			

Clearwater River Watershed Lake Sampling

Date of Sampling: 6/29/07
Start Time: 10:55
End Time:
Sampler(s): WB

Site Location: LAL01
Site Description Albion
Chain of Custody:

Comments:
-Water is clear with suspended algae very abundant
-beds of aquatic veg near shore covered with filamentous algae
-Daphnia very abundant

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft): 6.0

Weather: 70°, Sunny
N wind 5mph

Secchi Disk (ft): 5.8 B

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (ft)	pH (S.U.)
LAL01T	11:10	23.87	.397	3.63	0.5	7.77
		23.58	.398	2.57	1.0	7.68
		23.59	.398	2.51	~~2.0~~ 1.5	7.64
LAL01B	11:20	23.57	.398	2.47	~~3.0~~ 1.75	7.62 BTM
					4.0	
					5.0	
					6.0	
					7.0	
					8.0	
					9.0	
					10.0	
					11.0	
					12	
					13	
Data Set:					14	
					15	
Entered By/Date:		WB 7/12/07				
Proofed:						

Clearwater River Watershed Lake Sampling

Date of Sampling: 7/27/07
Start Time: 10:25
End Time:
Sampler(s): WB

Site Location: LAL01
Site Description: Albion Lake
Chain of Custody:

Comments:
- Water is green
- Suspended algae very prevalent
- lack of aquatic vegetation

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
75°, Sunny
N wind 10-15 mph

Secchi Disk (ft): 1.75

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/l)	Depth (m)	pH (S.U.)
LAL01T	10:30	26.71	349	11.09	0.50	9.21
		26.64	350	10.91	1.00	9.17
LAL01B	10:35	26.48	352	8.89	~~2.00~~ 1.5	9.10
		26.50	353	8.57	~~1.75~~ ~~3.00~~ 2.0	9.05
					4.00	
					5.00	
					6.00	
					7.00	
					8.00	
					9.00	
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

WB 11/16/07

Clearwater River Watershed Lake Sampling

Date of Sampling: 8/24/07
Start Time: 10:20
End Time: 10:45
Sampler(s): WB

Site Location: LAL01
Site Description: Albion Lk
Chain of Custody:

Comments:
- water is slightly green color
- aquatic vegetation is not abundant

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft):

Weather:
70°, Sunny
N wind 5mph

Secchi Disk (ft): 3.5

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/l)	Depth (m)	pH (S.U.)
LAL01T	10:30	20.53	.296	8.84	0.50	9.22
LAL01B	10:35	20.16	.297	8.20	1.00	9.15
		19.90	.302	3.74	~~2.00~~ 1.5	8.74
		.	.	.	3.00	.
		.	.	.	4.00	.
		.	.	.	5.00	.
		.	.	.	6.00	.
		.	.	.	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

WB 11/16/07

Clearwater River Watershed Lake Sampling

Date of Sampling: 5/25/07
Start Time: 1015
End Time: 1035
Sampler(s): Jeff M

Site Location: LSW01
Site Description: Grant Out Lake

Chain of Custody:

Comments: lots of algae in the lake. Very cloudy/murky.

Site Coordinates: 45 13.665
94 04.430

Expected Depth (ft): 12 ft
Measured Depth (ft): 10 ft

Weather: Gray, 75% clouds, light Breeze. 65°F

Secchi Disk (ft): 0.75 ft

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/l)	Depth (m)	pH (S.U.)
LSW01	5/25/07	17.17	350	7.02/73.0%	0.50	8.13
		17.09	351	6.80/70.3	1.00	8.04
		16.72	351	6.15/62.9	2.00	7.95
		16.52	355	5.43/55.6	3.00	7.65
3.5 meters		16.55	359	5.16/53.1	~~4.00~~	7.60
		.	.	.	5.00	.
		.	.	.	6.00	.
		.	.	.	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
	Data Sent				12.00	
					13.00	
	Entered By/Date	WB 7/12/07			14.00	
					15.00	
	QA/QC By/Date	WB 11/16/07				

Clearwater River Watershed Lake Sampling

Date of Sampling: 6/29/07
Start Time: 10:10
End Time:
Sampler(s): WB

Site Location: LSW01
Site Description: Swartout Lk
Chain of Custody:

Comments:
- Water is very green with algae
- Pelicans very numerous on island of lake

Site Coordinates:

Expected Depth (ft): 1.0
Measured Depth (ft): 1.0

Weather: 70°, Sunny Calm

Secchi Disk (ft): 0.5

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (mS)	D.O. (mg/l)	Depth (ft)	pH (S.U.)	
LSW01T	6/29/07 10:30	23.80	.326	7.87	0.5	8.88	
		23.~~80~~007	.331	5.62	1.0	8.71	
		23.01	.331	5.46	~~2.0~~ 1.5	8.62	
		23.01	.332	5.04	~~3.0~~ 2.0	8.57	
		~~23.05~~	.334	4.62	~~4.0~~ 2.5	8.49	
LSW01B	10:45	22.92	.332	5.02	~~5.0~~ 3.0	8.52	Bottom
					6.0		
					7.0		
					8.0		
					9.0		
					10.0		
					11.0		
					12		
					13		
					14		
					15		
			WB 7/12/07				
			WB 11/16/07				

Clearwater River Watershed Lake Sampling

Date of Sampling: 7/27/07
Start Time: 9:45
End Time:
Sampler(s): WB

Site Location: LSW01
Site Description: Swartout Lake
Chain of Custody:

Comments: Water is very green with a lot of algae

Site Coordinates:

Expected Depth (ft):
Measured Depth (ft): 3.0 m

Weather: Sunny, 75°
N wind 10-15 mph

Secchi Disk (ft): 1.0

Field Measurements

Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/l)	Depth (m)	pH (S.U.)
LCE01T	10:00	25.81	316	7.88	0.50	9.40
		25.80	316	7.82	1.00	9.45
		25.77	316	7.75	~~2.00~~ 1.5	9.39
		25.74	316	7.66	~~3.00~~ 2.0	9.35
LCE01B	10:05	25.69	317	7.59	~~4.00~~ 2.5	9.32
		25.56	318	7.32	~~5.00~~ 3.0	9.37
		.	.	.	~~6.00~~	.
		.	.	.	~~7.00~~	.
		.	.	.	~~8.00~~	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

WB 11/16/07

Clearwater River Watershed Lake Sampling

Date of Sampling: 8/24/07
Start Time: 9:30
End Time:
Sampler(s): WB

Site Location: LSW01
Site Description: Swartout Lake
Chain of Custody:

Comments:
- Very severe algae bloom
- water is covered with green algae scum
- No aquatic vegetation submerged

Site Coordinates:

Expected Depth (ft): 9.5
Measured Depth (ft):

Weather: 65°, Sunny
N wind 5mph

Secchi Disk (ft): 0.5

Field Measurements						
Field Sample ID	Sample Date and Time	Temp (°C)	Cond. (uS/cm)	D.O. (mg/l)	Depth (m)	pH (S.U.)
LSW01T	9:45	20.54	.309	11.16	0.50	9.65
		20.37	.310	10.05	1.00	9.59
		20.35	.310	9.89	~~2.00~~ 1.5	9.57
		20.32	.311	9.37	~~3.00~~ 2	9.55
LSW01B	9:50	20.24	.312	6.95	~~4.00~~ 2.5	9.47
		19.60	.334	0.76	~~5.00~~ 3	8.69
		.	.	.	6.00	.
		.	.	.	7.00	.
		.	.	.	8.00	.
		.	.	.	9.00	.
					10.00	
					11.00	
					12.00	
					13.00	
					14.00	
					15.00	

Field Form: 2007 Stream Sampling

Client: CRWD

Site Location: WR0.2

Project No.:

Site Description:

Date: 5/14/07

Weather:

Sampler(s): Kim Wilson

Samples Taken: Yes ✓ No

Start Time:

Sample Time:

End Time:

Channel Conditions:

DTW Measurement:

COC Number:

Notes: BM 13.2

Field Parameters				
Sample I.D.	Temp. (^{0}C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
1 WR0.2	11.9		13.5	

Stage Ht:

Rated Flow:

Gauged Flow: 4.66 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)	10'	.8'0 (.67)				30		
1			15					
2			19					
3			20					
4			23					
5			23					
6			25					
7			28					
8			21					
9			24					
10			16			WB 7/12/07		

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 6

Date: 6/14/07

Sampler(s): Lue Wattson

Start Time: _____

End Time: _____

Channel Conditions: _____

COC Number: _____

Site Location: Union IN

Site Description: _____

Weather: _____

Samples Taken: Yes ✓ No

Sample Time: _____

DTW Measurement: _____

Notes: BM 3.6

Field Parameters				
Sample I.D.	Temp. (^{0}C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
2 Union IN	7.2	[illegible]	11.1	

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 2.61 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)	10'	2.5	1			30		
2			2					
4			1½					
6			3					
8			4					
10			1½					

WB 7/12/07

Field Form: 2007 Stream Sampling

Client: CRWD

Site Location: Union Out

Project No.:

Site Description:

Date: 5/4/07

Weather:

Sampler(s): Tim Walther

Samples Taken: Yes ✓ No

Start Time:

Sample Time:

End Time:

Channel Conditions:

DTW Measurement:

COC Number:

Notes:

BM 2.6

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
B Union Out	14.2		20+	

Stage Ht:

Rated Flow:

Gauged Flow: 2.69 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0 ~~0~~ (left side) 1	4'	.60	40			30		
2			52					
3			43					
4			0					
						WB 7/10/07		

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.:

Date: 5/4/07

Sampler(s): [illegible]

Start Time:

End Time:

Channel Conditions:

COC Number:

Site Location: CR 25.2

Site Description:

Weather:

Samples Taken: Yes ✓ No

Sample Time:

DTW Measurement:

Notes:

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
4. CR25.2	13.9		5.2	

Stage Ht:_____ Rated Flow:_____ Gauged Flow: 20.53 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft²)	Discharge (Q, ft³/sec)
0, (left side)	20'	1.2	10			30		
1			15					
2			16					
3			15					
4			21					
5			4					
6			8					
7			17					
8			19			WB	7/12/07	
9			14					
10			15					

Field Form: 2007 Stream Sampling

Client: CRWD

Site Location: WR0.2

Project No.:

Site Description:

Date: 5 23 07

Weather:

Sampler(s): RJ SO

Samples Taken: Yes ✓ No

Start Time:

Sample Time:

End Time:

Channel Conditions:

DTW Measurement:

COC Number:

Notes: BM13.6

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
4	20.5	542	13.6	860

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 2.10 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft²)	Discharge (Q, ft³/sec)
0, (left side)	.5	6" 0.5	10			30°		
1	1		14					
2	1		14					
3	1		16					
4	1		15					
5	1		12					
6	1		18					
7	1		14					
8	1		11					
9	.5		5					
					WB	7/12/07		

Field Form: 2007 Stream Sampling

Client: CRWD

Site Location: CR 28.2

Project No.:

Site Description:

Date: 5 22 07

Weather:

Sampler(s): Ken Cutler

Samples Taken: Yes — No

Start Time: 11:30

Sample Time:

End Time:

Channel Conditions:

DTW Measurement:

COC Number:

Notes: AM 1.4

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
3	21.2		11.5	

Stage Ht:_____ Rated Flow:_____ Gauged Flow:_____

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)		@ 3.6						
	To	Weedy	To get	Flow				
			WB 7/12/07					

Field Form: 2007 Stream Sampling

Client: CRWD

Site Location: Union out

Project No.:

Site Description:

Date: 5 23 07

Weather:

Sampler(s):

Samples Taken: Yes ✓ No

Start Time: 1045

Sample Time:

End Time:

Channel Conditions:

DTW Measurement:

COC Number:

Notes: BM 2.9

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
2	208	508	13.1	8 71

Stage Ht: Rated Flow: Gauged Flow: 1.28

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side) 1	3'	5"	20			30'		
2			36					
3			41					
			Data S[illegible]					
					WB	7/12/07		

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.:

Date: 52307

Sampler(s):

Start Time: 1000

End Time:

Channel Conditions:

COC Number:

Site Location: UNION IN

Site Description:

Weather:

Samples Taken: Yes — No

Sample Time:

DTW Measurement:

Notes: BM 41

Field Parameters				
Sample I.D.	Temp. (^{0}C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
1	20.0	722	5.1	823

Stage Ht:_____ Rated Flow:_____ Gauged Flow: 1.70 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side) 1	10'	2' 1(2.2)	1			30		
2			2					
3			2½					
4			2					
5			3					
6			2					
7			1					
8			1					
9			½					
10			0					
						WB 7/12/07		

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.:

Date: 6.2507

Sampler(s):

Start Time:

End Time:

Channel Conditions:

COC Number:

Site Location: WR0.2

Site Description:

Weather:

Samples Taken: Yes ✓ No

Sample Time:

DTW Measurement:

Notes: BM 13'6

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
4	27.2		10.3	

Stage Ht:_____ Rated Flow:_____ Gauged Flow: 0.29 cfs

Stream Gauging Data

Revs. / Time

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	~~Velocity (60% Depth)~~	Velocity (60%) 20% Depth	Velocity (60%) 80% Depth	~~Average Velocity (ft/sec)~~	Area (ft^2)	Discharge (Q, ft^3/sec)
0. (left side)	10".5	4" (.33)	1			30 sec	.165	
1	1	.33	3				.33	
2	1	.33	4				.33	
3	1	.33	3 ½				.33	
4	1	.33	2				.33	
5	1	.33	3 ½				.33	
6	1	.33	2				.33	
7	1	.33	1				.33	
8	1	.33	½				.33	
9	1	.33					.33	
10	.5	.33					.33	
				WD 7/12/07				

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.:

Date:

Sampler(s):

Start Time:

End Time:

Channel Conditions:

COC Number:

Site Location: U/Work OUT

Site Description:

Weather:

Samples Taken: Yes No

Sample Time:

DTW Measurement:

Notes:

Field Parameters				
Sample I.D.	Temp. (^{0}C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)

Stage Ht:_____ Rated Flow:_____ Gauged Flow:_____

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
		No Flow						

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.:

Date: 6/26/07

Sampler(s): KW

Start Time: 1145

End Time:

Channel Conditions:

COC Number:

Site Location: UNIOW IN

Site Description:

Weather:

Samples Taken: Yes ✓ No

Sample Time:

DTW Measurement:

Notes: BM 4.0

Field Parameters				
Sample I.D.	Temp. (^{0}C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
2	24.5		5.2	

Stage Ht:_____ Rated Flow:_____ Gauged Flow:_____

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)	10	2	0			30		
1			0					
2			0					
3			0					
4			0					
5			0					
6			0					
7			0	Data Set				
8			0	Reviewed By/Date		WB 7/12/07		
9			0					
10			0					

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.:

Date: 62507

Sampler(s): Kel

Start Time: 1100

End Time:

Channel Conditions:

COC Number:

Site Location: CR 28 #2

Site Description:

Weather: Sunny 85°

Samples Taken: Yes ✓ No

Sample Time:

DTW Measurement:

Notes: BM 6.8

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
1	26.1		7.5	9.0

Stage Ht:_____ Rated Flow:_____ Gauged Flow: 1.37 cfs

Stream Gauging Data

R.V.S.

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	~~Velocity (60% Depth)~~	Velocity 60% 20% Depth	Velocity 60% 80% Depth	~~Time Average Velocity (60/sec)~~	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)	20.5	3.2	0			30	1.6	
1	1	3.2	0				3.2	
2	1	3.2	1				3.2	
3	1	3.2	1½				3.2	
4	1	3.2	1				3.2	
5	1	3.2	1				3.2	
6	1	3.2	0				3.2	
7	1	3.2	0				3.2	
8	1	3.2	0				3.2	
9	1	3.2	1½				3.2	
10	1	3.2	2				3.2	
11	1	3.2	1				3.2	
12	1	3.2	1½				3.2	
13	1	3.0	0			RB 7/10/07	3.2	
14	.5	3.2	0				1.6	

Field Form: 2007 Stream Sampling

Client: CRWD

Site Location: UNION OUT

Project No.:

Site Description:

Date: 7 26 07

Weather:

Sampler(s):

Samples Taken: Yes ✓ No

Start Time:

Sample Time:

End Time:

Channel Conditions:

DTW Measurement:

COC Number:

Notes:

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
UNION OUT 1				

Stage Ht:

Rated Flow:

Gauged Flow:

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity		Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
				20% Depth	80% Depth			
0								
0. (left side) .83	20"	2" 0.17	5			30		
1.67		2"	4					

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 61

Date: 72609

Sampler(s): _____

Start Time: _____

End Time: _____

Channel Conditions: _____

COC Number: _____

Site Location: UNION IN

Site Description: _____

Weather: _____

Samples Taken: Yes ✓ No

Sample Time: _____

DTW Measurement: _____

Notes: _____

Field Parameters				
Sample I.D.	Temp. (^{0}C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
UNION IN	27.1		1.1	

2

Stage Ht: _____ Rated Flow: _____ Gauged Flow: _____

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)	10'	1' 5"						
1			0					
2			0					
3			0					
4			0					
5			0					
6			0					
7			0					
8			0					
9			0					
10			0					

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.:

Date: 8 20 07

Sampler(s): KW

Start Time: 800

End Time:

Channel Conditions:

COC Number:

Site Location: CR 28.2

Site Description:

Weather:

Samples Taken: Yes -- No

Sample Time:

DTW Measurement:

Notes: BM 7'

Field Parameters				
Sample I.D.	Temp. (^{0}C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
1	21.1		3.2	

Stage Ht:_____ Rated Flow:_____ Gauged Flow:_____

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)	20'	3'	0			30		
1			0					
2			1/2					
3			1					
4			0					
5			0					
6			1					
7			2					
8			1 1/2					
9			1					
10		—	0			—		

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 61

Date: 8 28 07

Sampler(s): KW

Start Time: 9:00

End Time: _____

Channel Conditions: _____

COC Number: _____

Site Location: UNION IN

Site Description: _____

Weather: _____

Samples Taken: Yes ✓ No

Sample Time: _____

_____

DTW Measurement: _____

Notes: _____

Field Parameters				
Sample I.D.	Temp. (^{0}C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
2	19.9		4.0	

Stage Ht: _____ Rated Flow: _____ Gauged Flow: _____

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)	10'	2.8	0			30°		
~~2~~ 2			0					
~~4~~ 4			½					
~~6~~ 6			½					
~~8~~ 8			0					
~~10~~ 10			0					

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.:

Date: 82007

Sampler(s): KW

Start Time: 10:00

End Time:

Channel Conditions:

COC Number:

Site Location: Union out

Site Description:

Weather:

Samples Taken: Yes ✓ No

Sample Time:

DTW Measurement:

Notes: BM 285

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
3	21.2		11.5	

Stage Ht:_____ Rated Flow:_____ Gauged Flow:_____

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft³/sec)
0, (left side)	2'8"					30		
1		1".08	12					
2		3"½.29	21					
3 2.7		1"½.13	11					

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.:

Date: 82907

Sampler(s): KW

Start Time: 1100

End Time:

Channel Conditions:

COC Number:

Site Location: BWR0.2

Site Description:

Weather:

Samples Taken: Yes ✓ No

Sample Time:

DTW Measurement:

Notes:

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
H	20.1		8.1	

Stage Ht:_____ Rated Flow:_____ Gauged Flow:_____

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0								
1. (left side) 2	10'	6" | .5	K			30		
4		10" | .83	1					
6		10" | .83	1½					
8		7" | .58	2					
10		4" | .33	0					
		Under Construction						

Field Form: 2007 Stream Sampling

Client: CRWD

Site Location: WR0.2

Project No.:

Site Description:

Date: 10/1/07

Weather:

Sampler(s): (

Samples Taken: Yes ✓ No

Start Time:

Sample Time:

End Time:

Channel Conditions:

DTW Measurement:

COC Number:

Notes:

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
4	14.1		12.2	

Stage Ht:_____ Rated Flow:_____ Gauged Flow:_____

Flow

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity		Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
				20% Depth	80% Depth			
0, (left side)								

Field Form: 2007 Stream Sampling

lient: CRWD

Project No.:

Date: 10/01/07

Sampler(s): KW

Start Time: 8:00

End Time:

Channel Conditions:

COC Number:

Site Location: CR 28.2

Site Description:

Weather:

Samples Taken: Yes ✓ No

Sample Time:

DTW Measurement:

Notes: BM 7.5

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
1	15.1		8.0	

Stage Ht:_____ Rated Flow:_____ Gauged Flow:_____

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)	20'	2.5						
1			0					
3			0					
5			½					
7A			½					
9			0					
11			0					
13			1					
15			2½					
17			3					
19			1					
20		—	0					

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.:

Date: 10/1/07

Sampler(s): KW

Start Time:

End Time:

Channel Conditions:

COC Number:

Site Location: UNION 1D

Site Description:

Weather:

Samples Taken: Yes ~~No~~

Sample Time:

DTW Measurement:

Notes:

Field Parameters				
Sample I.D.	Temp. (^{0}C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
2	142		6.5	

Stage Ht:

Rated Flow:

Gauged Flow: 0 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)	10'	2.5				30		
1			0					
2			0					
3			0					
4			0					
5			0					
6			0					
7			0					
8			0					
9			0					
10			0					

Field Form: 2006 Stream Sampling

Client: CRWD

Project No.:

Date: 10/1/07

Sampler(s):

Start Time:

End Time:

Channel Conditions:

COC Number:

Site Location: UNION CUT

Site Description:

Weather:

Samples Taken: Yes No

Sample Time:

DTW Measurement:

Notes:

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	16.2		12.1	

Stage Ht:_____ Rated Flow:_____ Gauged Flow:_____

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
1.0 (left side)	3'5	4" 0.33	21			30		
2		0.33	25					
3.5		0.33	19					

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 5.30.07

Sampler(s): Jess/Nic

Start Time: 2:30

End Time: 2:45

Channel Conditions: flowing

COC Number:

Site Location: Union Inlet ~~outlet~~

Site Description: Inlet ~~outlet~~ N of lake

Weather: sunny 80°

Samples Taken: (Yes) No

Sample Time: 2:45

DTW Measurement: 3.97

Notes: took on the downstream side from middle of culvert

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	20.97	704	4.89	7.55

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 1.7

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 5.30.07

Sampler(s): Jess/Nic

Start Time: 2:15

End Time: 2:25

Channel Conditions: Flowing

COC Number:

Site Location: Union outlet

Site Description: outlet of lake

Weather: sunny 60°

Samples Taken: (Yes) No

Sample Time: 2:20

DTW Measurement: 2.72

Notes:

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	23.35	500	8.64	8.37

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 226

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity		Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
				20% Depth	80% Depth			
0, (left side)								

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-108

Date: 4/18/07

Sampler(s): WB, NC

Start Time: 12:20

End Time:

Channel Conditions: flowing

COC Number:

Site Location: SSW04

Site Description: Tilsley Ave

Weather: 60°, Sunny

Samples Taken: (Yes) No FD1

Sample Time: 12:30

DTW Measurement: 1.52

Trans: 35.5 cm

Notes: water is brown with floating duckweed and vegetation

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
	7.29	418	9.64	7.65

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 5.387

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
Data Sent								
Entered by/Date		WB 7/12/07						
QA/QC								

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: SSW04 5/17/07

Sampler(s): NLC

Start Time: 13:00

End Time: 13:35

Channel Conditions: flow

COC Number:

Site Location: SSW04

Site Description: 15ft ln. c.l.nut to wetland

Weather: Sunny 70°

Samples Taken: Yes No

Sample Time: 1330

DTW Measurement: 2.06 dark 90+

Notes: clear, no camp

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	17.71	444	6.91	7.54

Stage Ht:_____ Rated Flow:_____ Gauged Flow: 1.101 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
		Data Sent						
		Entered By/Date:	WB	7/12/07				
		QA/QC By/Date:						

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 6.4.07

Sampler(s): MK

Start Time: 1200

End Time: 1235

Channel Conditions: flowing

COC Number: [redacted] C- 72

Site Location: SSW04

Site Description:

Weather: Sunny 70°

Samples Taken: (Yes) No

Sample Time: 1215

DTW Measurement: 2.09

Notes: some duck weed, very low. no carp seen

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	17.28	623	6.92	8.02

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 2.24

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
	Data Se							
	Entered	WB 7/12/07						
	Chkd							

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 6.18.07

Sampler(s): NIC

Start Time: 1200

End Time: 1220

Channel Conditions: flowing

COC Number:

Site Location: SSW04

Site Description:

Weather: Rain 70°

Samples Taken: (Yes) No

Sample Time: 1200

DTW Measurement: 2.51

c. 90+

Notes: low even w/ present rain, doesn't appear flashy

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
	23.07	539	4.92	7.73

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 0.14 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
			WB	7/12/07				

Field Form: 2007 Stream Sampling

lient: CRWD

Project No.:

Date: 4/18/07

Sampler(s): WB, NC

Start Time: 11:30

End Time:

Channel Conditions: flowing

COC Number:

Site Location: SDD01

Site Description: Drainage Ditch on CO Rd 37

Weather: 55°, Sunny

Samples Taken: (Yes) No

Sample Time: 11:35

DTW Measurement: 3.92 top of culvert downstream

Notes: -culvert has a layer of silt (soil) in it

90+ ≈ 2.25 cfs downstream end of culvert

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
	8.49	977	15.74	7.87

Stage Ht: _____ Rated Flow: _____ Gauged Flow: _____

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)		0.79						
		0.52						
		Data Sent:						
		Entered By/Date: WB 7/12/07						

Had to flow below culvert about 30 ft, not possible to gauge in culvert.

Field Form: 2007 Stream Sampling

Client:	CRWD	Site Location:	SD007
Project No.:	0002-107	Site Description:	off CR 37 / farm
Date:	5.17.07	Weather:	sunny 65°
Sampler(s):	MLC	Samples Taken:	(Yes) No
Start Time:	11:40	Sample Time:	12:00
End Time:	12:10		
Channel Conditions:	flowing	DTW Measurement:	4.25
COC Number:			[illegible] 927

Notes: Very little flow/water clear to none.

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
	14.47	907	12.19	7.81

Stage Ht: ______ Rated Flow: ______ Gauged Flow: .097 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft²)	Discharge (Q, ft³/sec)
0, (left side)								
		Data Set:						
		Entered By/Date: WB 7/12/07						
		Checked By/Date:						

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 6.4.07

Sampler(s): NJL

Start Time: 1100

End Time: 1120

Channel Conditions: flowing

COC Number:

Site Location: SD01

Site Description: Main Ditch - CO HWY 37 (Xing

Weather: sunny 70

Samples Taken: (Yes) No

Sample Time: 1100

DTW Measurement: 4.04

c-08

Notes: slow - 1.02 flow.

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	16.60	403	6.98	7.65

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 1.04 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
		Data Set:						
		Entered By/Date: WB 07/12/07						
		Checked By/Date:						

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 6-18-07

Sampler(s): WC

Start Time: 1050

End Time: 1120

Channel Conditions: flowing

COC Number:

Site Location: SD001

Site Description:

Weather: Rain 70°

Samples Taken: (Yes) No

Sample Time: 1100

DTW Measurement: 4.21

C-80

Notes: pully green
slow w/ rain
helping it. flashy
pully quickly

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
	20.32	789	5.98	8.17

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 0.583 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
					WB	7/12/07		

Field Form: 2007 Stream Sampling

lient: CRWD

Project No.: 0002-108

Date: 4/18/07

Sampler(s): WB, NC

Start Time: 12:00

End Time:

Channel Conditions: Flowing

COC Number:

Site Location: SHE01

Site Description: Hershaw Lake Outlet Stream-Co Rd 37

Weather: 60°, Sunny

Samples Taken: (Yes) No

Sample Time: 12:05

DTW Measurement: 2.21

trans: 45.5

Notes: Water is brown in color
- new culvert installed
- sediment in culvert

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
	10.22	405	12.51	7.89

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 0.705

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
		Data Set:						
		Entered By: WB 7/12/07						
		Checked By:						

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 5.17.07

Sampler(s): MC

Start Time: 1215

End Time: 1245

Channel Conditions: Slow

COC Number:

Site Location: SHE01

Site Description: CR37 Culvert (2nd)

Weather: Sunny 70°

Samples Taken: (Yes) No

Sample Time: 1230

DTW Measurement: 2.41

Clear 90+

Notes: 1.1ft flow, shallow

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	6.27	482	8.36	7.45

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 0.246 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
		Data Ver.						
		Entered By/Date	WB 7/12/07					
		Checked By						

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 6.4.07

Sampler(s): VLC

Start Time: 1120

End Time: 1145

Channel Conditions: flowing

COC Number:

Site Location: SHE01

Site Description: Hidden lake outlet

Weather: Sunny 70°

Samples Taken: ~~Yes~~ No

Sample Time: 1130

DTW Measurement: 2.36

c. 75

Notes:

Field Parameters				
Sample I.D.	**Temp.** (°C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	16.45	801	6.78	7.51

Stage Ht:_____ Rated Flow:_____ Gauged Flow:_____

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
					WB	7/12/07		

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 6.18.07

Sampler(s): NLC

Start Time: 1130

End Time: 1150

Channel Conditions: flowing

COC Number:

Site Location: SHE01

Site Description:

Weather: Rain

Samples Taken: (Yes) No

Sample Time: 1130

DTW Measurement: 2.52

C-68

Notes: Brown water

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	20.14	821	6.02	8.02

Stage Ht:_____ Rated Flow:_____ Gauged Flow: .194

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity- 20% Depth	Velocity- 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								

Data Set: WB 7/17/07

Entered by/Date:

Checked by/Date:

Field Form: 2007 Stream Sampling

Client:	CRWD	Site Location:	SSW03
Project No.:		Site Description:	Swartout Lk Inlet from Albion
Date:	4/18/07	Weather:	60°, Sunny
Sampler(s):	WB, NC	Samples Taken:	(Yes) No
Start Time:	11:15	Sample Time:	11:20
End Time:	11:25		
Channel Conditions:	flowing	DTW Measurement:	0.30
COC Number:			Trans: 90+

Notes: -water is clear

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	2.32	369	8.42	7.83

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 0.339 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
		Data Set:						
		Entered by: Date: WB 7/12/07						

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 5.17.07

Sampler(s): NIC

Start Time: 10:20

End Time: 10:30

Channel Conditions: flow

COC Number:

Site Location: SSW03

Site Description: 2' culvert / 50th St.

Weather: sunny 60s°

Samples Taken: (Yes) No

Sample Time: 10:30

DTW Measurement: 0.89

clarity- good

Notes: clear and flowing into lake.

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	11.37	447	7.33	7.45

Stage Ht: _____ Rated Flow: _____ Gauged Flow: .67 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								

Data Set: _____

Reviewed By: WB 7/12/07

Corrected: _____

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 6.4.07

Sampler(s): NIC

Start Time: 1025

End Time: 1045

Channel Conditions: Flowy

COC Number:

Site Location: SSW03

Site Description: Swanson Inlet - Alden outlet

Weather: Sunny 70°

Samples Taken: (Yes) No

Sample Time: 1045

DTW Measurement: 0.61

90°

Notes: Some Bubbles present.

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	16.80	463	8.56	7.4

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 1.035 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
		Data Set:						
		Entered by/Date: WB 7/12/07						
		Checked by/Date:						

Field Form: 2007 Stream Sampling

Client: CRWD

Site Location: SSWO3

Project No.: 0002-107

Site Description:

Date: 6.18.07

Weather: Rain 70°

Sampler(s): MC

Samples Taken: (Yes) No

Start Time: 1035

Sample Time: 10 40

End Time: 1050

Channel Conditions: flowing

DTW Measurement: 0.91

COC Number:

C-90F

Notes: low flow, some minor duckweed present.

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	23.02	641	5.32	7.91

Stage Ht:_____ Rated Flow:_____ Gauged Flow: 0.208 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
				WB 7/12/07				

Field Form: 2007 Stream Sampling

lient: CRWD

Project No.:

Date: 4/18/07

Sampler(s): NIC/NB

Start Time: 10:55

End Time: 11:10

Channel Conditions: flowing slowly

COC Number:

Site Location: SSW02

Site Description: Swartout Inlet SE

Weather: sunny 60°

Samples Taken: (Yes) No

Sample Time: 11:00

DTW Measurement: 1.13

Transparency: 90+

Notes: water is clear

Field Parameters				
Sample I.D.	Temp. (^{0}C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
	7.13	687	11.79	7.69

Stage Ht:_____ Rated Flow:_____ Gauged Flow: 0.73cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
			WB 7/12/07					

Field Form: 2007 Stream Sampling

* Duplicate

Client: CRWD

Project No.: 0002-107

Date: 5.17.07

Sampler(s): MS

Start Time: 10:25

End Time: ~~10:55~~ 10:55

Channel Conditions: Flowing

COC Number:

Site Location: SSW02

Site Description: CH 6

Weather: Sunny 65°

Samples Taken: (Yes) No

Sample Time: 6145

DTW Measurement: 0.51

cloudy : 07

Notes: Very Slow,

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	13.86	714	6.47	7.45

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 0.659 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
		Data Set						
		Entered By/Date:	WB 7/12/07					
		Chkd By/Date:						

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 6.4.07

Sampler(s): NJC

Start Time: 1000

End Time: 1030

Channel Conditions: flowing

COC Number:

Site Location: SSW02

Site Description:

Weather: Sunny 70°

Samples Taken: (Yes) No

Sample Time: 1010

DTW Measurement: 1.28

c. 70

Notes: Very slow

water - lots

of duck weed

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	17.73	678	6.78	7.42

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 1.4 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								

WB 7/12/07

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 6.18.07

Sampler(s): NIC

Start Time: 1020

End Time: 1035

Channel Conditions: flowing

COC Number:

Site Location: SSWC 2

Site Description:

Weather: cloudy rain 75°

Samples Taken: (Yes) No

Sample Time: 1020

DTW Measurement: 1.20

C-82

Notes: look like silty water, lots of duck weed.

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	**D.O. (mg/l)**	pH (S.U.)
	2351	452	3.09	8.02

Stage Ht: ______ Rated Flow: ______ Gauged Flow: 0.124

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity~ 20% Depth	80% Depth	Average Velocity (ft/sec)	Area (ft²)	Discharge (Q, ft³/sec)
0, (left side)								

IWB 7/17/07

Field Form: 2007 Stream Sampling

ient: CRWD

Project No.:

Date: 4/18/07

Sampler(s): WB, NC

Start Time: 10:30

End Time:

Channel Conditions: water flowing over weir

COC Number:

Site Location: SSW01

Site Description: Swartout Lake Outlet

Weather: 50°, Sunny

Samples Taken: (Yes) No

Sample Time: 10:35

DTW Measurement: us: 3.72 top of weir

ds: 6.55

Notes: Water is brown color
-very high pH
Transparency: 9.5 cm

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	9.81	323	15.28	9.39

Stage Ht:_____ Rated Flow:_____ Gauged Flow: 3.06

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								

WB 7/12/07

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 5.17.07

Sampler(s): NIC

Start Time: 11:15

End Time: 11:45

Channel Conditions: Flowing

COC Number:

Site Location: SSW01

Site Description: CH6

Weather: Sunny 65°

Samples Taken: (Yes) No

Sample Time: 1130

Clarity: 52

DTW Measurement: 3.89 (Lake) | 6.79 (Stream)

Notes: Located w/ Camp, marking, sediment loaded low flow

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	17.37	348	10.29	8.54

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 0.57 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								

Entered by/Date: WB 7/12/07

Field Form: 2007 Stream Sampling

Client: CRWD

Site Location: SSW01

Project No.: 0002-107

Site Description:

Date: 6.4.07

Weather: Smy 70°

Sampler(s): NIC

Samples Taken: ~~Yes~~ (No)

Start Time: 0950

Sample Time: ~~0950~~

End Time:

Channel Conditions: DRY - NO flow

DTW Measurement: DRY

COC Number:

Notes: DRY - NO flow

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)

DRY

Stage Ht: Rated Flow: Gauged Flow:

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
		Data Sor						
			WB 7/12/07					

Field Form: 2007 Stream Sampling

ient: CRWD

Project No.: 0002-108

Date: 4/18/07

Sampler(s): WB, NC

Start Time: 10:10

End Time:

Channel Conditions: water flowing through culvert

COC Number:

Site Location: SCE03

Site Description: SW Cedar Lk Inlet

Weather: 80°, Sunny

Samples Taken: (Yes) No

Sample Time: 10:15

DTW Measurement: 2.10

Trans: 90+

Notes: -gauged ds of fence

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	1.31	587	8.01	7.65

Stage Ht:_____ Rated Flow:_____ Gauged Flow: 1.60

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
			WB 7/12/07					

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 5.17.05

Sampler(s): MC

Start Time: 9:48

End Time: 10:15

Channel Conditions: Slow

COC Number:

Site Location: SCE03

Site Description: Inlet Ave at culvert

Weather: Sunny 70°

Samples Taken: (Yes) No

Sample Time: 10:10

DTW Measurement: 2.18

Clock: 58

Notes: Slow, lots of algae, green & brown

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	11.79	.754	5.43	7.50

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 0.731 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
			WB 7/12/07					

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 6.4.07

Sampler(s): NLC

Start Time: 0920

End Time: 0940

Channel Conditions: Flowing

COC Number:

Site Location: SCD23

Site Description:

Weather: Sunny 65°

Samples Taken: (Yes) No

Sample Time: 0930

09

DTW Measurement: 2.05

90+

Notes:

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	14.39	620	4.42	752

Stage Ht:

Rated Flow:

Gauged Flow: 1.28 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
			WB 7/17/07					

Field Form: 2007 Stream Sampling

Client: CRWD

Site Location: SCE03

Project No.: 0002-107

Site Description:

Date: 6.18.07

Weather: Cloudy 75°

Sampler(s): N/C

Samples Taken: ~~Yes~~ No

Start Time: 0930

Sample Time: 0945

End Time: 0950

11:15

Channel Conditions: flowing

DTW Measurement: 7.76

COC Number:

C-71

Notes:

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (mS/cm)	D.O. (mg/l)	pH (S.U.)
	20.07	803	7.96	7.42

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 2.24

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
					WB 7/12/07			

Field Form: 2007 Stream Sampling

ent: CRWD

Project No.:

Date: 4/18/07

Sampler(s): WB, NC

Start Time: 9:45

End Time: 10:00

Channel Conditions: flowing over weir

COC Number:

Site Location: SCE01

Site Description: Cedar Lk Outlet

Weather: 50°, Sunny

Samples Taken: (Yes) No

Sample Time: 9:50

DTW Measurement: ds: 6.33

trans: 90+

Notes: -Walleyes in stream

Field Parameters				
Sample I.D.	Temp. (°C)	Cond. (µS/cm)	D.O. (mg/l)	pH (S.U.)
	6.83	388	12.87	8.37

Stage Ht:_____ Rated Flow:_____ Gauged Flow: 10.87

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
			WB 7/12/07					

Field Form: 2007 Stream Sampling

lient: CRWD

Project No.: 0002-107

Date: 5.17.07

Sampler(s): NIC

Start Time: 9:00

End Time: 9:30

Channel Conditions: flowy

COC Number:

Site Location: SCE01

Site Description: left culvert / CH 18

Weather: sunny 1200

Samples Taken: (Yes) No

Sample Time: 9:20

DTW Measurement: 0.79

clarity - 90+

Notes: Clear & low

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	15.97	533	11.02	8.53

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 3.3 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
			Data Sht:					
			Entered By/Date:		WB	7/12/07		
			Verified By/Date:					

Duplicate

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 6.4.07

Sampler(s): NLC

Start Time: 0850

End Time: 0915

Channel Conditions: Flowing

COC Number:

Site Location: SCE01

Site Description: Eden Lake outlet ICR6

Weather: Sunny 60°

Samples Taken: Yes No

Sample Time: 0900

DTW Measurement: 2.61

clear 90+

Notes: recent rain so more flow

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	**pH** (S.U.)
	19.70	404	8.38	8.31

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 4.31 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
			Data Ent					
			Entered By:		WB	7/12/07		
			Checked By:					

Duplicate

Field Form: 2007 Stream Sampling

Client: CRWD

Project No.: 0002-107

Date: 6.18.07

Sampler(s): NIC

Start Time: 8:50

End Time: 0920

Channel Conditions: flowing

COC Number:

Site Location: SCES 1

Site Description:

Weather: cloudy 75°

Samples Taken: (Yes) No

Sample Time: 0910

DTW Measurement: 7.06

C-85

Notes: low flow, Dead carp present

Field Parameters				
Sample I.D.	**Temp.** (^{0}C)	**Cond.** (mS/cm)	**D.O.** (mg/l)	pH (S.U.)
	24.59	355	5.05	8.03

Stage Ht: _____ Rated Flow: _____ Gauged Flow: 0.507 cfs

Stream Gauging Data

Distance from Initial Point (ft)	Width (ft)	Depth (ft)	Velocity (60% Depth)	Velocity 20% Depth	Velocity 80% Depth	Average Velocity (ft/sec)	Area (ft^2)	Discharge (Q, ft^3/sec)
0, (left side)								
					WB	7/20/07		