2009 Annual Tracking Report for New Wastewater Facilities

Minnesota Pollution Control Agency

January 2010

Legislative Charge

Minn. Statutes § 115.447 Tracking Report For New Wastewater Facilities

Subd. 1. Annual report required. The Pollution Control Agency shall annually prepare a report tracking the location and capacity of each new wastewater treatment system requiring a national pollutant discharge elimination system or state disposal system permit built after May 1, 2000. The report shall also include the name of the owner, primary engineering firm that designed the facilities, the primary contractor that constructed the facilities, and any management company, other than the owner, that manages the facilities. The annual report must also provide the total number of new systems built after that date. The commissioner shall submit the report to the legislative committees with jurisdiction over environmental policy and finance, and publish the report on the agency's Web site, by February 1 of each year.

Subd. 2. New facilities not meeting permit requirements. (a) The report required under subdivision 1 shall include the information required in paragraphs (b) and (c) for the first five years of operation of a new facility.

(b) For national pollutant discharge elimination system permitted facilities, provide a list of reported effluent violations that occurred during each calendar year. This list should include the effluent parameter violated; the violation date; and, if available, any known information regarding the causes of the reported limit violations.

(c) For state disposal system permitted facilities, provide a summary of conditions at the facilities which pose an imminent threat to public health and safety as defined in rules of the Pollution Control Agency, or a list of reported limit violations that occurred during each calendar year. This list should include the parameter violated; violation date; and, if available, any known information regarding the causes of the reported public health risk or limit violations.

HIST: 2000 c 492 art 1 s 43; 2006 c 244 s 1

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Minnesota Pollution Control Agency

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Executive Summary

Minn. Stat. § 115.447 (Statute) was passed in 2000, creating the requirement for the Minnesota Pollution Control Agency (MPCA) to submit an annual report identifying the total number of new wastewater treatment systems constructed after May 1, 2000. In 2006, the Minnesota Legislature added a number of new report information elements to this statute, related to pieces of information about the facility and also required a list of any effluent violations for the new facilities for an initial operating period of five (5) years.

A total of 99 new Minnesota permitted wastewater treatment systems have been constructed and put into operation since May 1, 2000. This total number includes three (3) new systems that were constructed and began operation during 2009. None of these new systems reported effluent violations or imminent threats to public health during the period they were in operation during 2009.

The report lists the number of new systems put into service per year from 2000 to 2009 in a series of Tables (see Tables 1, 2, 4, 6 and also Appendix I), and varies from a low number of three (3) up to a high number of 20. Additional information items about each facility are also identified in each of these tables. The report also lists the parameter, the date, and any known information about violations for the new systems in a series of Tables (see Tables 3, 5, 7, and A through E in Appendix II). The annual number of violations per set of new systems, has varied from a low number of zero (0) violations to a high number of 39 violations.

General trends for 2009 are that the number of new systems is down, the average design flow is stabilizing at approximately 40,000 gallons per day (gpd) per new system, and the average population equivalent served per systems is stabilizing at approximately 500. Land-based or State Disposal System (SDS) permitted systems are no longer the higher percentage or dominant treatment system chosen by the communities, housing developments and locations building their first treatment system.

Introduction

Minn. Stat. § 115.447 was passed in 2000, creating the requirement for the Minnesota Pollution Control Agency to submit an annual report identifying the total number of new wastewater treatment systems constructed after May 1, 2000. From 2001 through 2005, the MPCA prepared this annual report as required by the original statute language (see Appendix I for the 2005 report in this format).

In 2006, the Minnesota Legislature added a number of new report information elements to this statute. This was in response to reported problems with small communities properly treating wastewater and meeting their permit requirements. Subdivision 1 of the Statute was changed to require the MPCA to identify the design engineering firm, the primary construction contractor, and any management company (or contract operations firm) for each new facility. Subdivision 2 was added, and requires the MPCA to report the first five (5) years of monitoring information related to whether or not each new facility is meeting their permit requirements. The 2006 Statute additions have resulted in format modifications for the annual report, and in fact will likely cause the report appearance to slowly evolve over time as each subsequent year of compliance data is included. For example, the 2010 report (or next year's report scheduled to be submitted to the Minnesota Legislature in February 2011) will be the first one to have five (5) years of compliance data for the 2006 new facilities.

This report will begin with a section on the new facilities for 2009.

2009 New Wastewater Systems Report

There have been a total of 99 new Minnesota permitted wastewater treatment systems constructed and put into operation since May 1, 2000. These new systems are serving communities, housing developments and locations that previously had no central wastewater collection and treatment system requiring either a National Pollutant Discharge Elimination System (NPDES) or State Disposal System (SDS) Permit.

During 2009, three (3) new systems were constructed and began operation as listed in Table 1.

This table shows one (1) new SDS permitted wastewater system and two (2) new NPDES permitted wastewater systems began operation in 2009. None of these three (3) systems contract with an outside management company. Also, none of these new systems reported effluent violations while in operation during 2009, and the one (1) new SDS permitted wastewater system did not report any imminent threats to public health during 2009.

Table 1: 2009 New Wastewater Systems

Permittee	County	Capacity (gallons per day)	Population Equivalent (a)	Permit Type	Owner	Primary Engineering Firm	Primary Contractor	Management Company	2009 NPDES or SDS Limit Violations
Sturgeon Lake, City of	Pine	83,000	1,107	SDS	City of Sturgeon Lake	LHB, Inc.	Utility Systems of America	None	No
Urbank, City of	Ottertail	11,000	147	NPDES	City of Urbank	Widseth Smith Nolting & Associates, Inc.	Kober Excavating	None	No
Wolf Lake, City of	Becker	8,400	112	NPDES	City of Wolf Lake	Moore Engineering	Burski Excavating Inc.	None	No
Total = 3		102,400	1,365						

(a) Population Equivalent – The population equivalent is calculated by dividing the design capacity by average per capita usage estimated at 75 gallons per day. The number does not necessarily match the U.S. census population of the community.

2009 Update for the 2008 New Wastewater Systems

Table 2 identifies the seven (7) new systems that were constructed and began operation during 2008. In 2008, one (1) of these systems reported effluent violations. This facility reported a total of eight (8) effluent limitation violations in 2008. The other six (6) NPDES permitted wastewater systems did not report any violations. There were zero (0) SDS permitted wastewater systems that began operation in 2008.

Updated Table 2 shows that three (3) of the NPDES permitted wastewater systems reported no effluent violations during 2009 and four (4) of the NPDES permitted wastewater systems reported a total of 39 effluent violations.

Table 3 shows the 2009 violations list and Table A in Appendix II shows the 2008 violations list respectively. Each of these tables identify the community, permit type, effluent parameter, violation date, and the known information regarding the causes of the reported violations. The statute language requires a violation date to be reported. In most cases permit effluent limitations are average or mean calculated values and the violation will not identify a specific individual date of when it occurred. The MPCA has identified the month and year of the violation in each of these tables.

Table 2: 2008 New Wastewater Systems (with 2008 & 2009 violations)

Community	County	Capacity (gallons per day)	Population Equivalent (a)	Permit Type	Owner	Primary Engineering Firm	Primary Contractor	Management Company	2008 NPDES or SDS Limit Violations	2009 NPDES or SDS Limit Violations
Bigelow, City of	Nobles	26,400	352	NPDES	City of Bigelow	Short Elliott Hendrickson, Inc.	Svoboda Excavating	None	No	No
Effie, City of	Itasca	21,000	280	NPDES	City of Effie	Liesch Assoicates	Wagner Construction	None	No	Yes
Hope- Somerset Township	Steele	10,170	136	NPDES	Hope- Somerset Township	Jacques Whitford NAWE	Heselton Construction	Bruce Frandel, Certified Operator	No	Yes
La Salle, City of	Watonwan	15,000	200	NPDES	City of LaSalle	Ayres Associates	Holtmeir Construction	Steve Carson, Certified Operator	No	Yes
Meriden Township	Steele	16,100	215	NPDES	Meriden Township	Jacques Whitford NAWE	Niles Weise	None	No	No
Springsteel Island Sanitary District	Roseau	25,000	333	NPDES	Lake Township	KBM, Inc	Wagner Construction	None	Yes	Yes
Walters, City of	Faribault	15,620	208	NPDES	City of Walters	Bonestroo	Hodgeman Drainage	None	No	No
Total = 7		129,290	1,724							

(a) Population Equivalent – The population equivalent is calculated by dividing the design capacity by average per capita usage estimated at 75 gallons per day. The number does not necessarily match the U.S. census population of the community.

Table 3: 2008 New Wastewater Systems – 2009 Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Effie, City of	NPDES	TSS Percent Removal	Feb-09	Calendar Monthly Average, %. Concentration and loading limits met. Returned to compliance.
Effie, City of	NPDES	Fecal Coliform	May-09	Calendar Geometric Mean, #/100 ml. Low flow, unable to obtain representative sample. Returned to compliance.
Effie, City of	NPDES	TSS Percent Removal	Jul-09	Calendar Monthly Average, %. Concentration and loading limits met. Returned to compliance.
Effie, City of	NPDES	Fecal Coliform	Aug-09	Calendar Geometric Mean, #/100 ml. Low flow, unable to obtain representative sample. Resolution pending.
Effie, City of	NPDES	TSS Percent Removal	Sep-09	Calendar Monthly Average, %. Concentration and loading limits met. Resolution pending.
Effie, City of	NPDES	CBOD5	Sep-09	Calendar Monthly Average, mg/L. Septic tanks pumped an caused high CBOD5. Resolution pending.
Effie, City of	NPDES	Fecal Coliform	Sep-09	Calendar Geometric Mean, #/100 ml. Low flow, unable to obtain representative sample. Resolution pending.
Hope- Somerset Township	NPDES	CBOD5	Apr-09	Calendar Monthly Average, mg/L. Cause unknown. Returned to compliance.
Hope- Somerset Township	NPDES	CBOD5	Apr-09	Maximum Calendar Weekly Average, mg/L. Cause unknown. Returned to compliance.
Hope- Somerset Township	NPDES	CBOD5 Percent Removal	Apr-09	Calendar Monthly Average, %. Cause unknown. Returned to compliance.
Hope- Somerset Township	NPDES	CBOD5 Percent Removal	Jun-09	Calendar Monthly Average, %. Cause unknown. Returned to compliance.
Hope- Somerset Township	NPDES	CBOD5	Aug-09	Calendar Monthly Average, mg/L. Cause unknown. Returned to compliance.
Hope- Somerset Township	NPDES	CBOD5	Aug-09	Maximum Calendar Weekly Average, mg/L. Cause unknown. Returned to compliance.
Hope- Somerset Township	NPDES	CBOD5 Percent Removal	Aug-09	Calendar Monthly Average, %. Cause unknown. Returned to compliance.
Hope- Somerset Township	NPDES	CBOD5	Oct-09	Calendar Monthly Average, mg/L. Cause unknown. Resolution pending.
Hope- Somerset Township	NPDES	CBOD5	Oct-09	Maximum Calendar Weekly Average, mg/L. Cause unknown. Resolution pending.

Table 3 (continued): 2008 New Wastewater Systems – 2009 Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
La Salle, City of	NPDES	CBOD5	Mar-09	Calendar Monthly Average, mg/L. Cause unknown. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Jan-09	Calendar Monthly Average, mg/L. Operator error, not enough chemical added. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Jan-09	Calendar Monthly Average, kg/day. Operator error, not enough chemical added. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Feb-09	Calendar Monthly Average, mg/L. Operator error, not enough chemical added. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Feb-09	Calendar Monthly Average, kg/day. Operator error, not enough chemical added. Returned to compliance.
Springsteel Island Sanitary District	NPDES	CBOD5	Mar-09	Maximum Calendar Weekly Average, mg/L. Mechanical failure. Returned to compliance.
Springsteel Island Sanitary District	NPDES	CBOD5	Mar-09	Maximum Calendar Weekly Average, kg/day. Mechanical failure. Returned to compliance.
Springsteel Island Sanitary District	NPDES	CBOD5 Percent Removal	Mar-09	Calendar Monthly Average, %. Mechanical failure. Returned to compliance.
Springsteel Island Sanitary District	NPDES	TSS	Mar-09	Calendar Weekly Average, mg/L. Mechanical failure. Returned to compliance.
Springsteel Island Sanitary District	NPDES	TSS	Mar-09	Calendar Monthly Average, mg/L. Mechanical failure. Returned to compliance.
Springsteel Island Sanitary District	NPDES	TSS	Mar-09	Calendar Weekly Average, kg/day. Mechanical failure. Returned to compliance.
Springsteel Island Sanitary District	NPDES	TSS	Mar-09	Calendar Monthly Average, kg/day. Mechanical failure. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Mar-09	Calendar Monthly Average, mg/L. Operator error, not enough chemical added. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Mar-09	Calendar Monthly Average, kg/day. Operator error, not enough chemical added. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Apr-09	Calendar Monthly Average, mg/L. Operator error, not enough chemical added. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	May-09	Calendar Monthly Average, mg/L. Operator error, not enough chemical added. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Jun-09	Calendar Monthly Average, mg/L. Operator error, not enough chemical added. Returned to compliance.

Table 3 (continued): 2008 New Wastewater Systems – 2009 Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Springsteel Island Sanitary District	NPDES	TSS	Jul-09	Calendar Weekly Average, mg/L. Mechanical failure. Returned to compliance.
Springsteel Island Sanitary District	NPDES	TSS	Jul-09	Calendar Monthly Average, mg/L. Mechanical failure. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Jul-09	Calendar Monthly Average, mg/L. Operator error, not enough chemical added. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Jul-09	Calendar Monthly Average, kg/day. Operator error, not enough chemical added. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Aug-09	Calendar Monthly Average, mg/L. Operator error, not enough chemical added. Executed schedule of compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Nov-09	Calendar Monthly Average, mg/L. Operator error, not enough chemical added. Resolution pending.
Total = 39				

2009 Update to the 2007 New Wastewater Systems Report

Table 4 lists the 11 new systems that were constructed and began operation during 2007. As first reported in January 2008, this list includes four (4) new NPDES permitted wastewater systems, and none of these systems reported effluent violations during the period that they were in operation during 2007. In addition, seven (7) new SDS permitted wastewater systems began operation in 2007 and one (1) of these systems reported one (1) violation during 2007 (see Table C in Appendix II). The other six (6) new SDS permitted wastewater systems did not report any violations during 2007. None of the seven (7) new SDS permitted wastewater systems reported any imminent threats to public health during 2007.

Table 4 was modified in January 2009 to show violations during 2008. Table 4 shows that one (1) of the NPDES permitted wastewater systems reported no effluent violations during 2008 and three (3) of the NPDES permitted wastewater systems reported a total of five (5) effluent violations. In addition, Table 4 indicates that five (5) of the SDS permitted wastewater systems reported no limit violations and none of the seven (7) SDS permitted wastewater systems reported any imminent threats to public health during 2008. Two (2) of the SDS permitted wastewater systems did report a total of three (3) limit violations during 2008. A summary of the reported violations during 2008 for these five (5) systems is included in Table B in Appendix II.

During 2009, Table 4 shows two (2) of the NPDES permitted wastewater systems reported no effluent violations, and two (2) of the NPDES permitted wastewater systems reported a total of 11 effluent violations. In addition, five (5) of the SDS permitted wastewater systems reported no limit violations and none of the seven (7) SDS permitted wastewater systems reported any imminent threats to public health during 2009. Two (2) of the SDS permitted wastewater systems did report a total of four (4) limit violations during 2009. A summary for the five (5) systems reporting violations during 2009 is included in Table 5.

Table 5 shows the 2009 violations list, Table B in Appendix II shows the 2008 violations list and Table C in Appendix II shows the 2007 violations list. Each of these tables identify the community, permit type, effluent parameter, violation date, and the known information regarding the causes of the reported violations. The statute language requires a violation date to be reported, in most cases permit effluent limitations are average or mean values and the violation will not identify a specific individual date of when it occurred. The MPCA has identified the month and year of the violation in each of these tables.

We have reviewed the three (3) years of operation of the 2007 new systems, and there does not appear to be any patterns emerging in the violations to report.

Table 4: 2007 New Wastewater Systems Report (with 2007, 2008 & 2009 Violations)

Community	County	Capacity (gallons per day)	Population Equivalent (a)	Permit Type	Owner	Primary Engineering Firm	Primary Contractor	Management Company	2007 NPDES or SDS Limit Violations	2008 NPDES or SDS Limit Violations	2009 NPDES or SDS Limit Violations
Audubon Development	Washington	13,000	173	SDS	MBM Development	Ayers Associates	Kober Excavating	Peterson Management	No	No	No
Conger, City of	Freeborn	20,730	276	NPDES	City of Conger	Ayres Associates	Contractors Edge Inc.	None	No	Yes	No
Diamond Lake Woods	Hennepin	13,500	180	SDS	Patrick DeWing	Jacques Whitford NAWE	Kober Excavating	Ecocheck	No	No	No
Evan, City of	Brown	12,800	171	NPDES	City of Evan	DeWild Grant Reckert and Associates	TNT Construction	None	No	Yes	Yes
Lake Shetek Sanitary District	Murray	232,000	3,093	NPDES	Lake Shetek Sanitary District	Bolton and Menk, Inc.	Dunnick Brothers	City of Currie	No	No	No
Rockpoint Church	Washington	14,000	187	SDS	Charles Palmer	Jacques Whitford NAWE	Kober Excavating	Ecocheck	No	Yes	No
Sanctuary	Washington	21,000	280	SDS	John Arkel	Jacques Whitford NAWE	Kober Excavating	Ecocheck	No	No	No
Tom's Harbor	Cass	11,832	158	SDS	Ralph Schmitz	Landecker	Kober Excavating	Harbor Shores LLC	No	No	Yes
Viking, City of	Marshall	10,500	140	NPDES	City of Viking	Liesch Associates	SJ Louis Construction	None	No	Yes	Yes
Villard, City of	Pope	34,300	457	SDS	City of Villard	Widseth Smith Nolting & Associates, Inc.	Riley Brothers Construction, Inc.	None	No	No	Yes
Whistling Valley Development, Phase 2	Washington	9,000	120	SDS	Anderson Sorenson Homes, Inc.	Jacques Whitford NAWE	Glenn Rehbein Excavating	Ecocheck	Yes	Yes	No
Total = 11		392,662	5,235								

(a) Population Equivalent – The population equivalent is calculated by dividing the design capacity by average per capita usage estimated at 75 gallons per day. The number does not necessarily match the U.S. census population of the community.

Table 5: 2007 New Wastewater Systems – 2009 Violation List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Evan, City of	NPDES	CBOD5	Apr-09	Calendar Weekly Average, mg/L. Cause unknown. Returned to compliance.
Tom's Harbor	SDS	Total Nitrogen	Jul-09	12 Month Moving Average, mg/L. Cause unknown. Resolution pending.
Tom's Harbor	SDS	Total Nitrogen	Aug-09	12 Month Moving Average, mg/L. Cause unknown. Returned to compliance.
Tom's Harbor	SDS	Total Nitrogen	Oct-09	12 Month Moving Average, mg/L. Cause unknown. Resolution pending.
Viking, City of	NPDES	TSS Percent Removal	Jan-09	Calendar Monthly Average, %. Cause unknown. Returned to compliance.
Viking, City of	NPDES	Flow	Feb-09	Daily Maximum, mgd. Cause unknown. Resolution pending.
Viking, City of	NPDES	Flow	Mar-09	Daily Maximum, mgd. Cause unknown. Resolution pending.
Viking, City of	NPDES	Flow	Mar-09	Calendar Monthly Average, mgd. Cause unknown. Resolution pending.
Viking, City of	NPDES	Flow	Apr-09	Daily Maximum, mgd. Cause unknown. Resolution pending.
Viking, City of	NPDES	Flow	Apr-09	Calendar Monthly Average, mgd. Cause unknown. Resolution pending.
Viking, City of	NPDES	Flow	May-09	Daily Maximum, mgd. Cause unknown. Resolution pending.
Viking, City of	NPDES	Flow	May-09	Calendar Monthly Average, mgd. Cause unknown. Resolution pending.
Viking, City of	NPDES	Flow	Jun-09	Daily Maximum, mgd. Cause unknown. Resolution pending.
Viking, City of	NPDES	TSS Percent Removal	Oct-09	Calendar Monthly Average, %. Cause unknown. Resolution pending.
Villard, City of	SDS	Fecal Coliform	Jun-09	Single Allowable Value, #/100 ml. Cause unknown. Returned to compliance.
Total = 15				

2009 Update to the 2006 New Wastewater Systems Report

Table 6 lists the 20 new systems that were constructed and began operation during 2006. Reporting 20 new systems for 2006 is a correction for this 2009 report. For the 2006, 2007 and 2008 reports, the MPCA incorrectly identified 21 new systems began operation in 2006. The Diamond Lake Woods system in Hennepin County was removed from Table 6, as this new system actually began operation in 2007. Table 6 is now correct.

Table 6 includes information on four (4) new NPDES permitted wastewater systems, and none of these systems reported effluent violations during the period that they were in operation during 2006. In addition, 16 new SDS permitted wastewater systems began operation in 2006 and none of these systems reported any violations or imminent threats to public health during 2006.

During 2007, three (3) of the NPDES permitted wastewater systems reported no effluent violations and 12 of the SDS permitted wastewater systems reported no limit violations. We also can report that none of the 16 SDS permitted wastewater systems reported any imminent threats to public health during 2007.

Table 6 does identify that one (1) NPDES permitted wastewater system did report one (1) effluent violation during 2007 and also indicates that four (4) SDS permitted wastewater systems did report 13 violations. A summary of the reported violations during 2007 for these five (5) systems is included in Table E in Appendix II.

Table E (see Appendix II) shows a majority of the reported violations for the SDS permitted systems were of the Total Nitrogen limit. While the MPCA reported that known information regarding the cause of these violations was not available during 2007, it is likely some of these systems have been receiving low influent flow and loadings and those operating conditions were contributing to difficulties with establishing denitrifying bacteria in the individual treatment systems.

Table 9 also shows violations during 2008. Table 9 shows that the four (4) NPDES permitted wastewater systems reported no effluent violations during 2008 and eleven (11) of the SDS permitted wastewater systems reported zero (0) limit violations. We also can report that none of the 16 SDS permitted wastewater systems reported any imminent threats to public health during 2008.

Table 9 identifies that five (5) SDS permitted wastewater systems did report 32 limit violations. A summary of the reported violations for the five (5) systems is included in Table D in Appendix II.

Table D (see Appendix II) shows all 32 of the reported violations in 2008 for the SDS permitted systems were of the Total Nitrogen limit. The MPCA identified in this table that each of the Total Nitrogen limit violations were reported to be due to low flow. This operating condition was likely to be contributing to low influent loadings that were causing significant difficulty for these wastewater systems to establish denitrifying bacteria in the treatment system.

Table 6 also shows that the four (4) NPDES permitted wastewater systems reported no effluent violations and 12 of the SDS permitted wastewater systems reported zero (0) limit violations during 2009. We also can report that none of the 16 SDS permitted wastewater systems reported any imminent threats to public health during 2009.

Table 6 identifies that four (4) SDS permitted wastewater systems did report 32 limit violations (see Table 7). The MPCA identified in this table that each of the Total Nitrogen limit violations were reported to be due to low flow, which was likely to be contributing to low influent loadings that was causing significant difficulty for these wastewater systems to establish denitrifying bacteria in the treatment system. The MPCA has recognized that these violations are occurring, and is considering ways to provide technical operational assistance, changes to permits, or enforcement actions, depending on the causes, to attempt to address these violations.

Table 6: 2006 New Wastewater Systems Report (with 2006 through 2009 Violations)

Community	County	Capacity (gallons per day)	Population Equivalent (a)	Permit Type	Owner	Primary Engineering Firm	Primary Contractor	Management Company	2006 NPDES or SDS Limit Violations	2007 NPDES or SDS Limit Violations	2008 NPDES or SDS Limit Violations	2009 NPDES or SDS Limit Violations
Cambridge Isanti Middle School	Isanti	10,176	136	SDS	ISD 911	North American Wetland Engineering	Kober Excavating	EcoCheck	No	Yes	Yes	No
Camp Victory	Wabasha	27,000	360	NPDES	Camp Victory Ministries	Arden Environmental Engineering	Ellingson Companies	Bonestroo	No	No	No	No
Credit River Township - Stonebridge	Scott	14,400	192	SDS	Credit River Township	Halling Engineering	K.A. Witt Construction, Inc.	EcoCheck	No	No	No	No
Credit River Township - Territory, Phase 7	Scott	15,300	204	SDS	Credit River Township	Halling Engineering	K.A. Witt Construction, Inc.	EcoCheck	No	No	Yes	Yes
Edgewood Estates Second	Dodge	24,252	323	SDS	Bigelow Enterprises	Massey Land Surveying and Engineering	Swenke Construction	Curt Reetz, Certified Opeartor	No	No	Yes	Yes
Emily, City of	Crow Wing	41,600	555	SDS	City of Emily	Short Elliott Hendrickson Inc	Hammerlund Construction	None	No	No	No	No
Farms of Lake Elmo	Washington	10,000	133	SDS	M & K Development	Ayers Associates	J.R. Ferche	EcoCheck	No	No	No	No
Gary, City of	Norman	27,800	371	NPDES	City of Gary	Widseth Smith Nolting & Associates, Inc.	R.J. Zavoral and Sons, Inc.	None	No	No	No	No
Hammond, City of	Wabasha	23,000	307	NPDES	City of Hammond	Ayres Associates	Ellingson Companies	Peoples Service	No	Yes	No	No
Lake Volney Estates	Le Sueur	11,993	160	SDS	Brian Kocina	I&S Engineers & Architects, Inc	Fessel Environmental Service Inc	None	No	No	No	No
Meadows of Whisper Creek	Hennepin	20,000	267	NPDES	Greenfield Development, LLC	RLK Kuusisto	Ashbrook, Inc.	Veolia Water	No	No	No	No
Miller Farms Cluster Development	Washington	32,000	427	SDS	Derrick Construction Co.	Ayers Associates	Kober Excavating	None	No	No	No	No
Nordwall Estates	Sherburne	34,200	456	SDS	Gregg Nordwall	John Oliver and Associates	West Branch Construction	None	No	No	No	No
Preserve at Birch Lake	Chisago	34,425	459	SDS	SMC Land Development, LLC	North American Wetland Engineering	J.R. Ferche	EcoCheck	No	No	No	No
River Park	Olmsted	31,250	417	SDS	Journey Developing, Inc.	McGhie & Betts Inc	Jech Construction	McGhie & Betts Inc	No	Yes	Yes	Yes
Riverwood Hills Septic Drainfield Site	Olmsted	23,081	308	SDS	Fitzpatrick Construction	McGhie & Betts Inc	Fitzpatrick Construction	McGhie & Betts Inc	No	Yes	Yes	Yes
Tapestry	Washington	25,125	335	SDS	St. Croix Farms, LLC	Wenck Associates	Kober Excavating	Advanced Septic Solutions Inc.	No	No	No	No
Trophy Lake Estates III	Chisago	16,700	223	SDS	Trophy Lake Estates	North American Wetland Engineering	Ferguson Brothers Excavating	Septic Check	No	Yes	No	No
Waters Edge @ Leech Lake LLC	Cass	14,100	188	SDS	Wayne Overby	Ecos Engineering	Royal Oaks Construction Inc.	None	No	No	No	No
Windsor Meadows	Sherburne	14,850	198	SDS	Alan Gilyard 10-24 Development LLC	Bogart, Pederson, & Associates, Inc.	Meadowvale Construction, Inc.	EcoCheck	No	No	No	No
Total = 20		451,252	6,017									

(a) Population Equivalent – The population equivalent is calculated by dividing the design capacity by average per capita usage estimated at 75 gallons per day. The number does not necessarily match the U.S. census population of the community.

Table 7: 2006 Wastewater Systems – 2009 Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Credit River - Territory	SDS	Total Nitrogen	Apr-09	Instantaneous Maximum, mg/L. Low Flow. Resolution pending.
Credit River - Territory	SDS	Total Nitrogen	Jul-09	Instantaneous Maximum, mg/L. Low Flow. Resolution pending.
Credit River - Territory	SDS	Total Nitrogen	Oct-09	Instantaneous Maximum, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Jan-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Feb-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Mar-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Apr-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	May-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Jun-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Jul-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Aug-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Sep-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Oct-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Nov-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Jan-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Feb-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.

Table 7 (continued): 2006 Wastewater Systems – 2009 Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Mar-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Apr-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	May-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Jun-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Jul-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Aug-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Jan-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Feb-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Mar-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Apr-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	May-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Jun-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Jul-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Aug-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Sep-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Oct-09	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Total = 32				

New Wastewater Facilities Analysis and Trends

2009 Analysis and Trends

The MPCA has been reporting to the Minnesota Legislature on new wastewater treatment systems since 2001 and has collected enough data to provide some analysis on the trends that have been observed. Beginning in the 2006 New Wastewater Facilities Report, we first reported on four general observations related to the:

1. The number of new wastewater systems per year
2. The average wastewater treatment system design capacity per year
3. The average population served per new wastewater treatment system
4. The percentage of new land treatment (SDS permit) systems per year

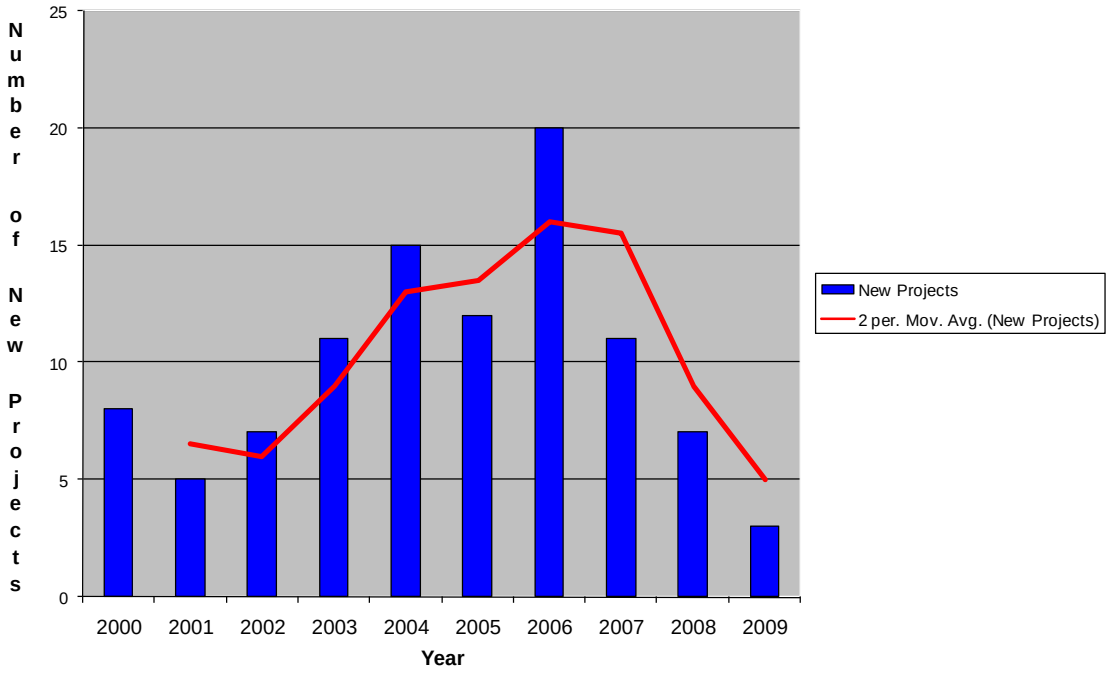
The trends analysis from 2006, 2007 and 2008 showed some shifts occurring in the data categories. This report will look at these four sets of data, but will explain the analysis from the 2009 viewpoint.

The 2008 report also discussed a new emerging trend related to an increase in the number of effluent violations reported per year for the 2006 new wastewater systems. This report will also discuss this possible 5th new emerging trend.

Number of new wastewater systems per year

Figure 1 shows the number of new wastewater treatment systems per year from 2000 to 2009.The number of new systems per year generally increased from 8 new wastewater systems in 2000 to 20 new systems in 2006. This increasing trend through 2006 has been reversed in 2007 through 2009, with the number of new systems steadily decreasing down to 3 new systems for 2009.

Figure 1: Number of New Wastewater Treatment Systems Per Year



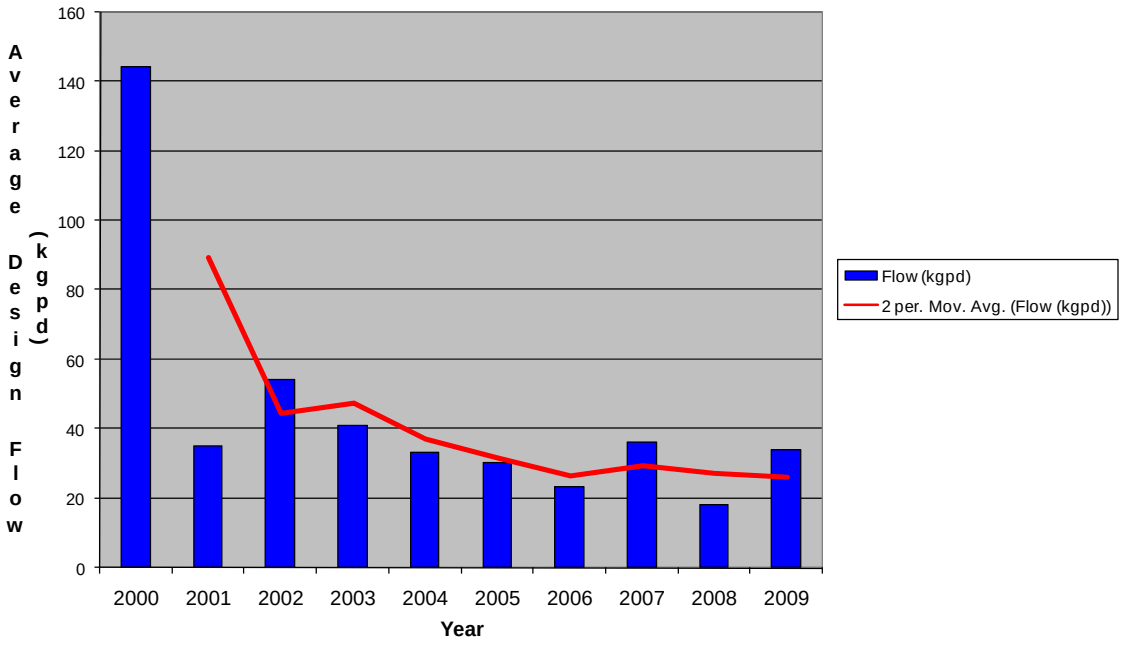
For this report, we have chosen to use a trend line that draws segments using the average of the previous two-year period. This trend line shows the generally increasing number of new systems from 2000 through 2006, and also accurately depicts the current downward trend for the number of new systems reported from 2007 through 2009.

This downward trend in the number of new facilities appears to be related directly to the current economic downturn which has affected new housing construction in Minnesota. This is illustrated by information in both Table 1 and Table 2 that shows there were no new private-owned housing, development-related wastewater systems that were constructed and began operation in either 2009 or 2008. In contrast, 14 new privately-owned housing, development-related wastewater systems were constructed and began operation in 2006 (see Table 6), and 5 new privately-owned housing, development-related wastewater systems were constructed and began operation in 2007 (see Table 4).

Average design capacity per system

Figure 2 shows the average design capacity or design flow per system from 2000 to 2009. The average design capacity per system data from 2000 to 2006 showed a general decrease from 144 kgpd (or 144,000 gallons per day) to 23 kgpd. The average design capacity per system data for 2007, 2008 and 2009 has averaged about 20 to 40 kgpd.

Figure 2: New Wastewater Treatment Systems - Facility Average Design Flow (kgpd)

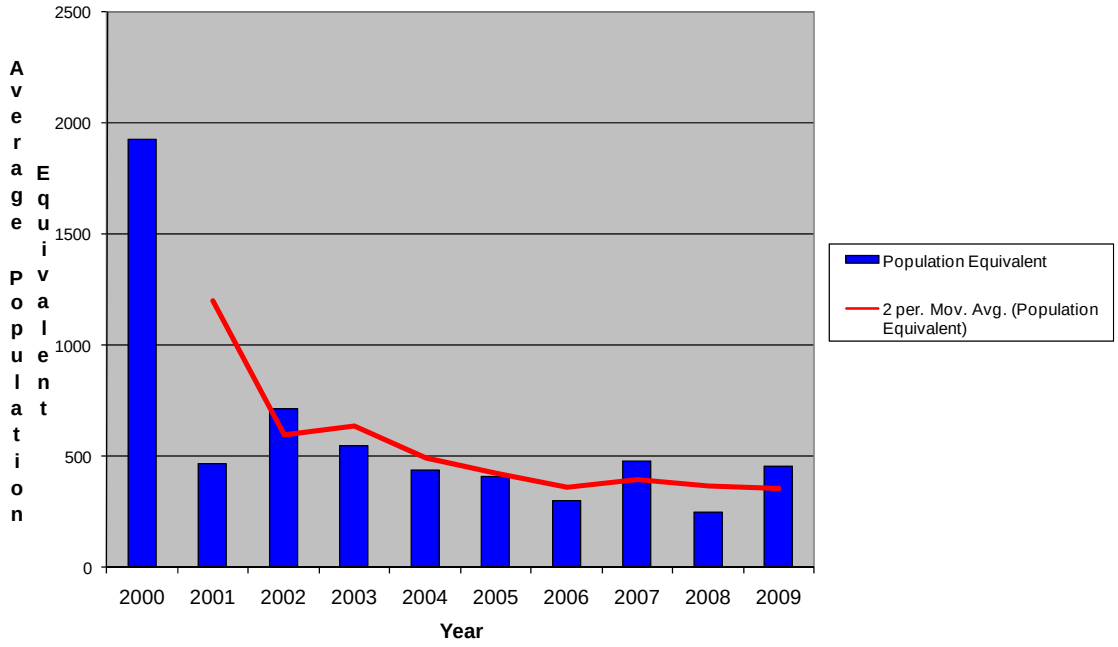


After dropping to the lowest average design flow per system reported in 2008 (18 kgpd or 18,000 gallons per day), the average design flow per new system actually moved up slightly to 34 kgpd (34 kilo gallons per day or 34,000 gallons per day) for 2009. We have chosen to use the trend line that draws segments for the average of the previous two-year period for this data set also. This trend line was selected because it shows a general downward trend for the average design flow per system from 2000 to 2006, and also shows the trend line for the average design flow per system calculated values flattening from 2006 to 2009.

Average population served per new treatment system

Figure 3 shows the average population served per new treatment system per year from 2000 to 2009. In 2009 the average population was 455.

Figure 3: New Wastewater Treatment Systems - New Facilities Average Population Equivalent Served

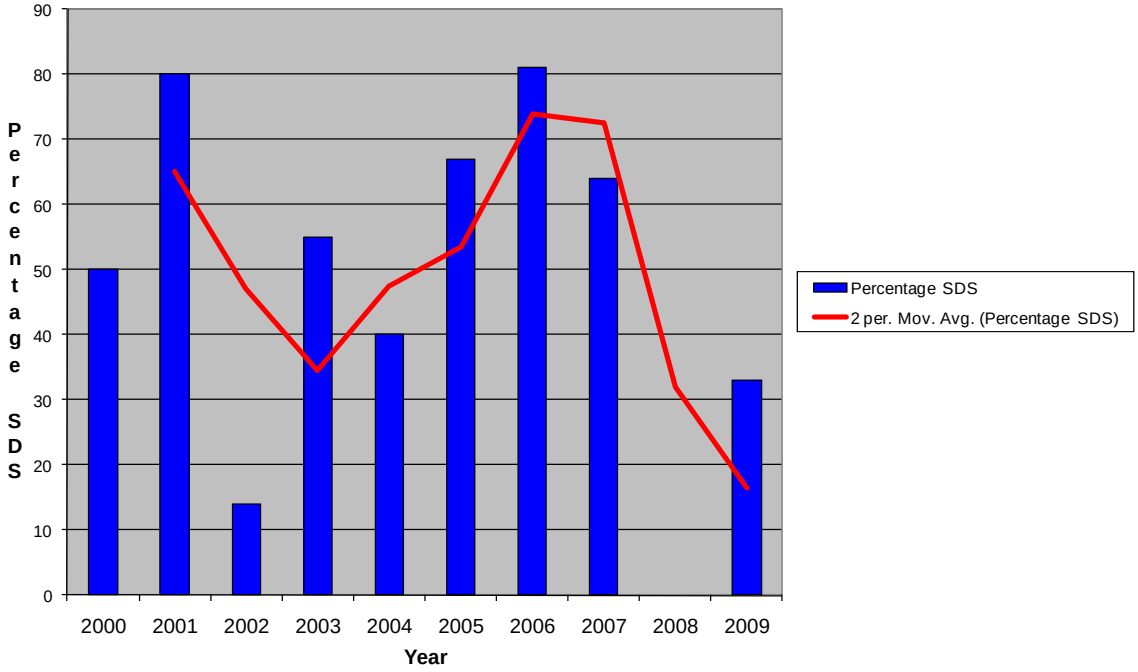


The average population equivalent per new wastewater treatment system increased from the lowest ever reported value (from 2000 to 2009) of 246 in 2008, up to 455 in 2009. We have chosen to use the trend line that draws segments for the average of the previous two-year period to analyze this data set also. The trend line shows a similar pattern to Figure 2, with a sharp decrease shown in the data from 2000 to 2006, and then a flattening of the values over the time period from 2007 to 2009. This may be showing the population equivalent being served per system is settling in just below a population equivalent of approximately 500.

Percentage of land treatment systems per year

This trend was first analyzed in the 2007 report, with the observation that the percent of SDS permitted systems (or number of land treatment systems) was increasing. Figure 4 shows the percent of SDS permitted systems (or new land treatment systems) that were constructed and began during the period from 2000 to 2009.

Figure 4: Percentage SDS



We have chosen to use the trend line that draws segments for the average of the previous two-year period to analyze this data set. This trend line shows that the percent of SDS systems has been down from 2000 to 2003, up from 2003 to 2006 and down from 2006 to 2009. It now appears that there really is no trend pattern for this calculated data set, and the MPCA will not report on this as a trend in next year's report.

Emerging trend (ET): Increase in number of reported violations?

The MPCA reported a possible emerging trend based on reviewing the violations data for the 2006 new systems in the 2008 report. We did that last year for the first time because violations data was then first available for at least three consecutive years for the 2006 new systems. This possible trend appears worth observing, and as each new year has at least three (3) data years (for this 2009 report this would include the 2006 new systems, and the 2007 new systems), we will identify our initial observations.

ET: 2006 New Systems

For the 2008 report, the MPCA observed one new trend emerging from the data. The 20 new wastewater systems that began operation in 2006 reported an increase in the number of violations from 2006 to 2008. The 2006 new wastewater systems reported zero (0) violations during the 2006 operational period, eight (8) violations were reported in the 2007 operational period, and 32 violations were reported during the 2008 operational period.

In the 2009 operational period, these 20 new systems from 2006 also reported a total of 32 violations. It appears that the number of violations is no longer increasing. The MPCA will observe this data set again for next year's report and determine if merits further observation.

ET: 2007 New Systems

The 2007 new wastewater systems reported one (1) violation during the 2007 operational period, eight (8) violations were reported in the 2008 operational period, and 15 violations were reported during the 2009 operational period. The MPCA will also observe this data set again for next year's report and determine if it merits further observation.

Conclusions

The 2006 changes to Minn. Stat. § 115.477 added new information that was required to be reported by the MPCA beginning with the 2006 Annual Report. The 2009 Annual Report continues to report this new information and as a result, the format for the Annual Report continues to evolve and be refined. During the 2009 period, none of the three (3) new systems reported permit limit violations and the one (1) new SDS permitted wastewater system did not report any imminent threats to public health during 2009.

The 20 new facilities from the 2006 period reported no permit limit violations to the MPCA in 2006. During 2007, five (5) of these 20 systems reported permit limit violations, and a total of 14 violations were recorded. For 2008, five (5) of these 20 systems reported permit limit violations, and a total of 32 violations were recorded. In 2009, four (4) of the 20 systems reported violations, and a total of 32 violations were reported. The MPCA will continue to track the operating record of these facilities in this reporting format through 2010 per the Statute.

The 11 new facilities from the 2007 period had one (1) new facility that reported one (1) permit limit violation to the MPCA in 2007. During 2008, five (5) of these 11 systems reported permit limit violations, and a total of eight (8) violations were recorded. For 2009, four (4) of the 11 systems reported permit limit violations, and a total of 15 violation were recorded. The MPCA will continue to track the operating record of these facilities in this reporting format through 2011 per the Statute.

The seven (7) new facilities from the 2008 period had one (1) facility that reported eight (8) permit limit violations to the MPCA in 2008. During 2009, four (4) of these seven (7) systems reported permit limit violations, and a total of 39 violations were recorded. The MPCA will continue to track the operating record of these facilities in this reporting format through 2012 per the Statute.

The MPCA has also observed general trends in the reported data, beginning in the 2006 Report. From 2000 to 2006, an increasing number of new wastewater treatment systems were being constructed each year with these systems decreasing in capacity (or design flow) and serving smaller populations. In 2007, each of these trends were moderately reversed with fewer new systems being constructed, and the systems average design flow and populations served slightly increasing. By 2008, the number of new systems, the systems average design flow, and populations served, were all decreasing or lower. For 2009, the number of new systems decreased again, but the population equivalent served was slightly higher. The lower number of new systems seems to be mainly attributed to fewer private housing development wastewater treatment systems being constructed. This continues to be a reasonable conclusion as the economic news reports in Minnesota are that the number of new houses being constructed is down even further and the housing sales market is down. In general, the size (capacity) and population served per system is still reflecting that the MPCA is issuing new permits to small wastewater system projects (for population equivalents of approximately less than 500).

In addition, from 2002 to 2006 we observed a general increase in the use of land-based wastewater disposal systems (SDS permits) as the new systems decreased in size. In 2007 the portion of projects that were SDS permits were also down slightly, but the percentage of SDS systems still exhibited a majority of the new systems for that year. For 2008, the percentage of SDS permitted wastewater systems dropped to zero (0), and in 2009 rose only to 33 percent. It appears that it is no longer a trend that a land-based system or a SDS treatment system is the primary choice for smaller communities. The data does show that the MPCA is still working with a growing number of smaller communities (or new developing areas) to provide their first wastewater treatment systems, and is reducing the number of communities in Minnesota without central wastewater collection and treatment systems.

Appendices

Appendix I: 2005 Annual Tracking Report for New Wastewater Facilities (for years 2000 – 2005) Minn. Stat. § 115.447

2005 – The following **12** wastewater treatment facilities were put into service during calendar year 2005 in communities that previously had no central collection and treatment:

Community	County	Capacity (gallons/day)	Pop Equiv.*	Permit Type
Big Sandy Lodge & Resort	Aitkin	25,070	334	SDS
Clearwater Harbor Sewage Treatment Facility	Stearns	28,000	373	SDS
Clontarf, City of	Swift	23,500	313	NPDES
Credit River Township - Territory	Scott	13,500	180	SDS
Frontenac Heritage Acres 3rd Addition	Goodhue	19,875	265	SDS
Garvin, City of	Lyon	21,500	286	NPDES
Highland Farms	Sherburne	14,000	186	SDS
Otsego (West), City of	Wright	72,000	960	NPDES
Prinsburg, City of	Kandiyohi	40,875	545	NPDES
Thumper Pond Development	Otter Tail	49,100	654	SDS
Windsor Oaks of Elk River	Sherburne	12,363	164	SDS
Whispering Ridge Cluster Development	Sherburne	45,450	606	SDS
		365,233	4,866	

2004 – The following **15** wastewater treatment facilities were put into service during calendar year 2004 in communities that previously had no central collection and treatment:

Community	County	Capacity (gallons/day)	Pop Equiv.*	Permit Type
Aspen Hills (Star City Builder)	Sherburne	19,500	260	NPDES
Avoca, City of and Iona, City of	Murray	74,000	986	NPDES
Cedar Mills, City of	Meeker	9,150	122	NPDES
Crane Lake, City of	St. Louis	52,390	698	NPDES
Crosslake, City of	Crow Wing	150,000	2,000	NPDES
Delft Sanitary District	Cottonwood	5,700	76	NPDES
Dehli, City of	Redwood	14,400	192	NPDES
Hidden Haven (Schlichting Development, Inc.)	Sherburne	22,500	300	SDS
Lakes of Fairhaven (Sienna Corporation)	Stearns	15,525	207	SDS
Lutsen Resort (Lutsen Resort Company)	Cook	25,500	340	SDS
Nerstrand, City of	Rice	48,000	640	NPDES
Revere, City of	Redwood	17,900	238	NPDES
Roscoe, City of	Stearns	15,955	212	SDS
Woods at Eagle Lake (Scott Breuer Const., Inc.)	Sherburne	13,838	184	SDS
Wyldewood Acres	Washington	9,000	120	SDS
		493,358	6,575	

2003 – The following **11** wastewater treatment facilities were put into service during calendar year 2003 in communities that previously had no central collection and treatment:

Community	County	Capacity (gallons/day)	Pop Equiv.*	Permit Type
Benton Utilities	Benton	150,000	2,000	NPDES
Country Meadows/Cmark Builders	Sherburne	17,100	228	SDS
Delavan, City of	Faribault	54,000	720	NPDES
Lansing Township	Mower	26,000	347	NPDES
Lismore Hutterian Brethren	Big Stone	13,000	173	SDS
Monterey Heights/Rolling Oaks	Scott	23,400	312	SDS
Sergeant , City of	Mower	10,600	141	NPDES
Town & Country Aspen Hills Development	Sherburne	19,500	260	NPDES
Turtle Run South	Anoka	85,000	1,133	SDS
Whistling Valley	Washington	11,000	147	SDS
Windsor Park 3rd Addition	Sherburne	39,600	528	SDS
		449,200	5,989	

2002 – The following **7** wastewater treatment facilities were put into service during calendar year 2002 in communities that previously had no central collection and treatment:

Community	County	Capacity (gallons/day)	Pop Equiv.*	Permit Type
Dumont, City of	Traverse	14,900	199	NPDES
Farwell-Kensington	Douglas	76,300	1,017	NPDES
Greenfield, City of	Hennepin	200,000	2,667	NPDES
Lewisville, City of	Watonwan	37,700	503	NPDES
Lutsen (Superior National Golf Properties)	Cook	21,000	280	SDS
Tamarack, City of	Aitkin	7,000	93	NPDES
Woodstock, City of	Pipestone	18,500	247	NPDES
		375,400	5,006	

2001 – The following **5** wastewater treatment facilities were put into service during calendar year 2001 in communities that previously had no central collection and treatment:

Community	County	Capacity (gallons/day)	Pop Equiv.*	Permit Type
Andover Elementary School (ISD # 11)	Anoka	15,000	200	SDS
Bejou, City of	Mahnomen	17,700	236	SDS
Carriage Station (Lake Elmo)	Washington	44,000	587	SDS
Big Stone Hutterite Colony (near Graceville)	Big Stone	10,400	139	NPDES
Turtle Run South (Oak Grove)	Anoka	86,300	1,151	SDS
		173,400	2,313	

2000 – The following **8** wastewater treatment facilities were put into service from May 1st to December 31st of calendar year 2000, in communities that previously had no central collection and treatment (the May 1st start date for calendar year 2000 is as stipulated in Minn. Stat. § 115.447):

Community	County	Capacity (gallons/day)	Pop Equiv.*	Permit Type
Birchwood Terrace (mobile home park)	Chisago	21,000	280	SDS
Fields of St. Croix Phase 2 (Lake Elmo)	Washington	31,000	413	SDS
Hanover, City of	Hennepin/Wright	645,000	8,600	NPDES
Hidden River (near South Haven)	Wright	17,000	227	SDS
Jackson Meadows (Marine on St. Croix)	Washington	5,500	73	SDS
Kilkenny, City of	Le Sueur	23,000	307	NPDES
Otsego (East), City of	Wright	400,000	5,333	NPDES
Palisade, City of	Aitkin	13,000	173	NPDES
		1,155,500	15,406	

*Pop. Equiv. – The population equivalent to the daily design flow of the treatment plant where average *per capita* usage is estimated at 75 gallons per day. This number does not necessarily match the US census population of the community.

Appendix II: Previous Years Violations Tables

Table A: 2008 New Wastewater Systems - 2008 Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Springsteel Island Sanitary District	NPDES	BOD	Jun-08	Calendar Monthly Average, mg/L. Cause unknown. Returned to compliance.
Springsteel Island Sanitary District	NPDES	TSS	Jun-08	Calendar Monthly Average, mg/L. Cause unknown. Resolution pending.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Jun-08	Calendar Monthly Average, mg/L. Cause unknown. Resolution pending.
Springsteel Island Sanitary District	NPDES	TSS	Jul-08	Calendar Monthly Average, mg/L. Cause unknown. Returned to compliance.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Jul-08	Calendar Monthly Average, mg/L. Cause unknown. Resolution pending.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Aug-08	Calendar Monthly Average, mg/L. Cause unknown. Resolution pending.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Sep-08	Calendar Monthly Average, mg/L. Cause unknown. Resolution pending.
Springsteel Island Sanitary District	NPDES	Total Phosphorus	Oct-08	Calendar Monthly Average, mg/L. Cause unknown. Resolution pending.
Total = 8				

Table B: 2007 New Wastewater Systems – 2008 Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Conger, City of	NPDES	BOD	Oct-08	Calendar Monthly Average, kg/day. Cause unknown. Resolution pending.
Conger, City of	NPDES	TSS	Oct-08	Calendar Monthly Average, kg/day. Cause unknown. Resolution pending.
Conger, City of	NPDES	TSS	Oct-08	Maximum Calendar Week Average, kg/day. Cause unknown. Resolution pending.
Evan, City of	NPDES	pH	May-08	Calendar Monthly Maximum, SU. Returned to compliance.
Rock Point Church	SDS	Total Nitrogen	Sep-08	12 Month Moving Average, mg/L. Likely due to low flow to system and difficulty maintaining denitrifying bacteria. Resolution pending.
Rock Point Church	SDS	Total Nitrogen	Oct-08	12 Month Moving Average, mg/L. Likely due to low flow to system and difficulty maintaining denitrifying bacteria. Resolution pending.
Viking, City of	NPDES	Flow	Oct-08	Allowable Daily Maximum, mgd. Cause unknown. Resolution pending.
Whistling Valley Development, Phase 2	SDS	Total Nitrogen	Mar-08	Calendar Quarterly Average, mg/L. Returned to compliance.
Total = 8				

Table C: 2007 New Wastewater Systems – 2007 Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Whistling Valley Development, Phase 2	SDS	Total Nitrogen	Jan-07	Calendar Quarterly Average (January to March) violated. Likely due to low flow to system and difficulty establishing denitrifying bacteria. Returned to compliance.
Total = 1				

Table D: 2006 Wastewater Systems – 2008 Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Cambridge Isanti Middle School	SDS	Total Nitrogen	Mar-08	Calendar year average, taken quarterly. Low Flow. Resolution pending.
Cambridge Isanti Middle School	SDS	Total Nitrogen	Jun-08	Calendar year average, taken quarterly. Low Flow. Resolution pending.
Cambridge Isanti Middle School	SDS	Total Nitrogen	Sep-08	Calendar year average, taken quarterly. Low Flow. Resolution pending.
Credit River Territory	SDS	Total Nitrogen	Apr-08	Instantaneous Max, mg/L. Low Flow, High Background Nitrogen in Soils. Resolution pending.
Credit River Territory	SDS	Total Nitrogen	Jul-08	Instantaneous Max, mg/L. Low Flow, High Background Nitrogen in Soils. Resolution pending.
Credit River Territory	SDS	Total Nitrogen	Oct-08	Instantaneous Max, mg/L. Low Flow, High Background Nitrogen in Soils. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Mar-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Apr-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	May-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Jun-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Jul-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Aug-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Sep-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Oct-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Edgewood Estates	SDS	Total Nitrogen	Nov-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.

Table D (continued): 2006 Wastewater Systems – 2008 Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Jan-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Feb-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Mar-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Apr-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	May-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Jun-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Jul-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Aug-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Sep-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Oct-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Apr-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	May-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Jun-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Jul-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Aug-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Sep-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
River Park	SDS	Total Nitrogen	Oct-08	12 Month Moving Average, mg/L. Low Flow. Resolution pending.
Total = 32				

Table E: 2006 Wastewater Systems – 2007 Violations List

Community	Permit Type	Parameter	Violation Date	Known Information Regarding Causes of Reported Limit Violations
Cambridge Isanti Middle School	SDS	Total Nitrogen	Sep-07	Not available. Ongoing resolution pending.
Hammond, City of	NPDES	Fecal Coliform	Apr-07	Not available. Returned to compliance.
River Park	SDS	Flow	Apr-07	Not available. Returned to compliance.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	May-07	Not available. Ongoing resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Jun-07	Not available. Ongoing resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Jul-07	Not available. Ongoing resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Aug-07	Not available. Ongoing resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Sep-07	Not available. Ongoing resolution pending.
Riverwood Hills Septic Drainfield Site	SDS	Total Nitrogen	Oct-07	Not available. Ongoing resolution pending.
Trophy Lake Estates III	SDS	Total Nitrogen	Jul-07	Not available. Ongoing resolution pending.
Trophy Lake Estates III	SDS	Total Nitrogen	Aug-07	Not available. Ongoing resolution pending.
Trophy Lake Estates III	SDS	Total Nitrogen	Sep-07	Not available. Ongoing resolution pending.
Trophy Lake Estates III	SDS	Total Nitrogen	Oct-07	Not available. Ongoing resolution pending.
Trophy Lake Estates III	SDS	Total Nitrogen	Nov-07	Not available. Ongoing resolution pending.
Total = 14				