

October 10, 2003

TO: INTERESTED PARTIES

RE: City of Prinsburg Wastewater Treatment Facility

Enclosed is the Environmental Assessment Worksheet (EAW) for the proposed City of Prinsburg Wastewater Treatment Facility, Kandiyohi County. The EAW was prepared by the Minnesota Pollution Control Agency (MPCA) and is being distributed for a 30-day review and comment period pursuant to the Environmental Quality Board (EQB) rules. The comment period will begin the day the EAW availability notice is published in the EQB Monitor, which will likely occur in the October 13, 2003, issue.

Comments received on the EAW will be used by the MPCA in evaluating the potential for significant environmental effects from this project and deciding on the need for an Environmental Impact Statement (EIS).

A final decision on the need for an EIS will be made by the MPCA Commissioner after the end of the comment period. If a request for an EIS is received during the comment period, or if the Commissioner recommends the preparation of an EIS, the MPCA Citizens' Board (Board) will make the final decision. The final EIS need decision will also be made by the Board if so requested by the project proposer, other interested parties or MPCA staff and if this request is agreed to by one or more members of the Board or the MPCA Commissioner. The Board meets once a month, usually the fourth Tuesday of each month, at the MPCA office in St. Paul. Meetings are open to the public and interested persons may offer testimony on Board agenda items. A listing of Board members is available on request by calling (651) 296-7306.

Please note that comment letters submitted to the MPCA do become public documents and will be part of the official public record for this project.

If you have any questions on the EAW, please contact Susan Heffron of my staff at (651) 297-1766.

Sincerely,

Beth G. Lockwood
Supervisor, Environmental Review Unit
Operations and Environmental Review Section
Regional Environmental Management Division

BGL:mln

Enclosure

ENVIRONMENTAL ASSESSMENT WORKSHEET

Note to reviewers: The Environmental Assessment Worksheet (EAW) provides information about a project that may have the potential for significant environmental effects. This EAW was prepared by the Minnesota Pollution Control Agency (MPCA), acting as the Responsible Governmental Unit (RGU), to determine whether an Environmental Impact Statement (EIS) should be prepared. The project proposer supplied reasonably accessible data for, but did not complete the final worksheet. Comments on the EAW must be submitted to the MPCA during the 30-day comment period, which begins with notice of the availability of the EAW in the *Minnesota Environmental Quality Board (EQB) Monitor*. Comments on the EAW should address the accuracy and completeness of information, potential impacts that warrant further investigation, and the need for an EIS. A copy of the EAW may be obtained from the MPCA by calling (651) 296-7398. An electronic version of the completed EAW is available at the MPCA Web site <http://www.pca.state.mn.us/news/eaw/index.html#open-eaw>.

1. Project Title: City of Prinsburg Wastewater Treatment Facility

<p>2. Proposer: <u>City of Prinsburg</u></p> <p>Contact Person <u>Mr. Harvey Van Eps</u></p> <p>And Title <u>Mayor of Prinsburg</u></p> <p>Address <u>City Hall 509 Third Street</u> <u>Prinsburg, Minnesota 56281</u></p> <p>Phone <u>(320) 978-8100</u></p> <p>Fax <u>(320) 978-8561</u></p>	<p>3. RGU: <u>Minnesota Pollution Control Agency</u></p> <p>Contact Person <u>Susan Heffron</u></p> <p>and Title <u>Project Manager</u></p> <p>Address <u>520 Lafayette Road North</u> <u>St. Paul, Minnesota 55155</u></p> <p>Phone <u>(651) 297-1766</u></p> <p>Fax <u>(651) 297-8676</u></p>
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4. Reason for EAW Preparation:

EIS	Mandatory	Citizen	RGU	Proposer
Scoping	<u> </u> EAW	<u>X</u> Petition	<u> </u> Discretion	<u> </u> Volunteered

If EAW or EIS is mandatory give EQB rule category subpart number and name: 4410.4300 subpart 18B

Wastewater treatment systems: “For...construction of a new municipal or domestic wastewater treatment facility with an average wet weather flow design flow capacity of 50,000 gallons per day or more, the MPCA shall be the RGU.” The city of Prinsburg’s new system is being designed for an average wet weather flow of 54,500 gallons per day.

5. Project Location: County Kandiyohi County City/Township Prinsburg

NE NE Section 15,16,21,22 Township T117N Range R36W

Tables, Figures, and Appendices attached to the EAW:

- **Exhibit 1:** County map showing the general location of the project;
- **Exhibit 2:** City of Prinsburg aerial photo;
- **Exhibit 3:** U.S. Geological Survey Map;
- **Exhibit 4:** City of Prinsburg map showing location of proposed facility;
- **Exhibit 5:** Kandiyohi County Soils Map;
- **Exhibit 6:** Land Use Map;

- **Exhibit 7:** Wastewater Schematic;
- **Exhibit 8:** Wastewater Treatment Site Map;
- **Exhibit 9:** Gravity Sewer Map;
- **Exhibit 10:** Water Service Map;
- **Exhibit 11:** MPCA Discharge Limits Letter;
- **Exhibit 12:** Natural Heritage and Nongame Research Program Response; and
- **Exhibit 13:** State Historic Preservation Office Correspondence.

6. Description:

- a. Provide a project summary of 50 words or less to be published in the *EQB Monitor*.

The city of Prinsburg (City) proposes to construct a wastewater treatment facility (WWTF) to serve new and existing commercial and residential units in the City. The proposed WWTF will consist of a new gravity sewer collection system with septic tanks, constructed wetlands, single pass sand filters, and ultraviolet (UV) disinfection. The City's system is being designed for an average wet weather flow of 54,500 gallons per day (gpd).

- b. Give a complete description of the proposed project and related new construction. Attach additional sheets as necessary. Emphasize construction, operation methods and features that will cause physical manipulation of the environment or will produce wastes. Include modifications to existing equipment or industrial processes and significant demolition, removal or remodeling of existing structures. Indicate the timing and duration of construction activities.

The City has proposed to construct a WWTF. The proposed WWTF will serve the existing commercial and residential units in the City. However, the proposed WWTF is being sized to accommodate a 20 percent growth projection of 545 people by 2020. The City's current population is approximately 458 people. The proposed WWTF will consist of a gravity sewer collection system, septic tanks, constructed wetlands, single pass sand filters for treatment, and an UV unit for disinfection. The treated wastewater will be discharged to Chetomba Creek.

Collection, Treatment and Disinfection System Description (General)

The new WWTF will be located west of Prinsburg on land currently in agricultural use (Exhibit 8). The proposed WWTF for the City is depicted in a wastewater schematic in Exhibit 7.

The WWTF will consist of replacing the existing sewer system with new polyvinyl chloride (PVC) pipe and rehabilitating a portion of the newer existing sewer lines. The gravity sewer collection system will consist of eight-inch to ten-inch PVC pipe. The mains will run along the roadway and in existing right-of-way. A gravity sewer map is found in Exhibit 9. Wastewater will gravity flow from individual homes via a four-inch PVC pipe to the sewer mains.

The treatment process begins with a series of four, 20,000-gallon septic tanks sized according to Minn. R. ch. 7080. Following the septic tanks, the wastewater will be discharged into a metering manhole, which will split the flow evenly to four constructed wetlands. The constructed wetlands will include Forced Bed Aeration™ for enhanced treatment. After each constructed wetland, the water will flow to one of two sand filter dosing tanks where it will be pumped to two sand filters. The water is then disinfected in the UV disinfection unit prior to being discharged to Chetomba Creek.

Gravity Sewer System

A gravity sewer collection system proposed for the site consists of approximately six miles (31,000 linear feet) of eight to ten-inch diameter PVC sewer pipe. It is estimated that approximately 23,000 linear feet of the existing sewer will be replaced. The remaining 8,000 linear feet will be examined to ensure that the existing pipe is properly sloped and has the structural integrity to remain in use. Pipe that is found to have defects will be replaced. Each home and business connection will have a gravity flow four-inch diameter PVC service line that connects to the sewer main.

Lift Stations

The WWTF will have three lift stations; one primary and two secondary. The primary lift station, a duplex submersible station, will deliver all the wastewater from the City to the treatment and disposal site. The lift station is sized so additional pumps may be added as the need arises. The two secondary lift stations will be intermediate pumping stations that lift the wastewater to the nearest manhole.

Manholes

Concrete manholes will be placed every 400 feet of the gravity sewer line. Each manhole will be four-feet in diameter with rim elevations flush with the ground service. The manhole lids will be marked as sanitary sewer and will be rated for vehicle traffic.

Septic Tanks

Four, 20,000 gallon pre-cast concrete septic tanks, in series, will provide primary treatment of the wastewater. The septic tanks will partially treat the wastewater by removing solids.

Flow Metering

Following the septic tanks, the effluent will flow into a pre-cast concrete metering manhole for evenly splitting the flow to four constructed wetland cells. Four outfall pipes will be installed in the manhole, and an ultrasonic flow meter and H-flume will be installed for continuous flow measurement. A four-inch isolation valve will be installed on each of the outfall pipes in the event that any of the wetlands needs repair.

Subsurface Flow Constructed Wetland

For wastewater treatment, the City is proposing a subsurface flow constructed wetland and a single pass sand filter. The subsurface flow constructed wetland system will consist of four treatment cells. Each treatment cell will be 17,100 square feet in size, for a total area of 68,400 square feet. The cells consist of a filter bay constructed below grade in a box lined with 30-mil PVC and filled with gravel. The gravel bed within the wetland provides a media for attached growth of bacteria. These bacteria, along with the wetland plants, provide for biological treatment of the water. The constructed wetland's purpose is to reduce biochemical oxygen demand (BOD₅).

The treatment media is an 18-inch layer of 3/4 to 1 1/2-inch gravel, with 2 to 3-inch drainfield rock located at the dosing and collection ends of the cell. The treatment bed will be insulated with a six-inch mulch layer to provide odor control and prevent freezing. The mulch material will be peat. Wastewater will flow horizontally through the cell, with an average detention time of seven days.

The insulating mulch layer covering the wetland may limit atmospheric diffusion of oxygen into the system. To maintain an aerobic environment within the constructed wetland, the Forced Bed Aeration™ system is proposed. A regenerative blower will periodically force air up through each wetland bed. Forced Bed Aeration™ provides considerable operational flexibility, enhances nitrification, and improves bed hydraulics.

Single Pass Sand Filter

The treated effluent from the four constructed wetlands will gravity flow into two, 15,000 gallon, pre-cast concrete sand filter dosing tanks. These tanks will house the pumps for the sand filters. The single pass sand filters will be used to further reduce solids in the effluent before the treated wastewater enters the UV unit. In the event that any constructed wetland needs to go offline for maintenance, the sand filters are designed with a Forced Bed Aeration™ system that would provide enough oxygen supply to handle secondary treatment of the entire wastewater flow.

UV Radiation Unit

The effluent limitation for continuous discharge to Chetomba Creek for fecal coliform is 200 organisms/100 ml. UV radiation is an effective bactericide and virucide that does not contribute to the formation of toxic compounds. Effluent from the sand filters will flow by gravity to the UV disinfection vault before flowing to Chetomba Creek.

Construction Activities

The primary method of sewer installation will be by open trench. New gravity sewer installation from the home to the grinder pumps will also be by trench. The lawns impacted by trenching will be restored. The installation of the collection WWTF will depend on the initiation of construction. If construction can be initiated before August 1, 2004, the construction can be completed in three months. Otherwise construction may take six to nine months due to freezing conditions typical of Minnesota winters.

The construction methods used for installing the septic tanks, subsurface flow wetlands, and sand filters are mechanical removal of soil by backhoe and dozer. It will take approximately one to two months to construct the WWTF.

c. Explain the project purpose; if the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The purpose of the project is to provide wastewater collection and treatment services to the citizens of the City. Currently, sewage from homes and most businesses enters individual septic tanks. The sewage from the septic tanks then enters an underground, unpermitted sewage collection system which discharges partially treated sewage to Chetomba Creek. The City has entered into an agreement with the MPCA to initiate construction of a new, permitted WWTF. The construction of the proposed WWTF will improve the environment by eliminating a non-complying direct discharge of wastewater to waters of the state (Chetomba Creek).

d. Are future stages of this development including development on any outlots planned or likely to happen? Yes no

if yes; briefly describe future stages, relationship to present project, timeline and plans for environmental review.

e. Is this project a subsequent stage of an earlier project? Yes No
If yes, briefly describe the past development, timeline and any past environmental review.

7. Project Magnitude Data			
Total Project Area (acres)	<u>7.5 acres</u>	and Length (miles)	<u>6.0 miles of sewer pipe</u>
Number of Residential Units:	Unattached <u>195</u>	Attached	<u> </u> maximum units per building
Commercial/Industrial/Institutional Building Area (gross floor space):			total square feet <u> </u>
Indicate area of specific uses (in square feet):			

Office _____	Manufacturing _____
Retail _____	Other Industrial _____
Warehouse _____	Institutional _____
Light Industrial _____	Agricultural _____
Other Commercial (specify) _____	
Building height _____	If over 2 stories, compare to heights of nearby buildings _____

8. Permits and approvals required. List all known local, state and federal permits, approvals and financial assistance for the project. Include modifications of any existing permits, governmental review of plans, and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing and infrastructure.

	Unit of Government	Type of Application	Status
	MPCA	Plans and Specifications	Submitted – under review
	MPCA	National Pollution Discharge Elimination System (NPDES) Permit	Submitted – under review
	MPCA	General Permit for Discharge of Storm Water During Construction	Will be submitted
	Kandiyohi County	County/State Road Crossing Utility Permit	Will be submitted
	Department of Natural Resources (DNR)	Work in the Bed of Public Waters	Will be submitted

9. Land use. Describe current and recent past land use and development on the site and on adjacent lands. Discuss project compatibility with adjacent and nearby land uses. Indicate whether any potential conflicts involve environmental matters. Identify any potential environmental hazards due to past site uses, such as soil contamination or abandoned storage tanks, or proximity to nearby hazardous liquid or gas pipelines.

The current land use of the proposed WWTF is agricultural cropland and is owned by the City. (See Exhibit 6) There will be a permanent loss in agricultural productivity as a result of the proposed project, although the land is not currently being farmed. The site is located between the City and Chetomba Creek. In the past, the land site was cropped to within ten feet of the creek. The land is moderately sloped six to eight percent toward the creek and continuous cropping has washed the soil from the hills to the low land adjacent to the creek. Soil descriptions are described in 19b and shown in Exhibit 5, the Kandiyohi County Soils Map. There are no known environmental hazards caused by previous or current agricultural use of the land.

10. Cover Types. Estimate the acreage of the site with each of the following cover types before and after development:

	Before	After		Before	After
Types 1-8 wetlands	_____	_____	Lawn/landscaping	5.0	5.0
Wooded/forest	_____	_____	Impervious Surfaces	2.8	2.8
Brush/grassland	_____	_____	Other (describe)*	0	7.5
Cropland	7.5	0	TOTAL	15.3	15.3

* WWTF – consisting of native prairie and wetland plantings.

11. Fish, Wildlife, and Ecologically Sensitive Resources.

- a. Identify fish and wildlife resources and habitats on or near the site and describe how they would be affected by the project. Describe any measures to be taken to minimize or avoid impacts.

The treatment site is currently agricultural cropland. Wildlife frequenting the fields and the adjacent creek areas include deer, raccoon, fox, skunk, rabbits, moles, gophers and mice. Birds such as waterfowl, songbirds and birds of prey frequent the site. Reptiles such as snakes, frogs, toads and turtles are present. Other species indigenous to the area also frequent the site.

Wildlife displaced during construction will likely return after construction. Rodent species will be discouraged from returning because of possible damage to the WWTF liners and underground piping by burrowing. This is an unavoidable impact of the conversion of open space to wastewater infrastructure. The constructed wetlands will create habitat for waterfowl.

Chetomba Creek is a class 7, limited resource value water. This means that the stream is limited in the propagation and maintenance of fish due to the physical nature of the stream. The current discharge of wastewater with only primary treatment may be limiting the use of the waters for wildlife and aesthetic purposes. The improvement in the quality of the discharge from the City is expected to improve the water quality.

- b. Are any state (endangered or threatened) species, rare plant communities or other sensitive ecological resources such as native prairie habitat, colonial waterbird nesting colonies or regionally rare plant communities on or near the site? Yes No

If yes, describe the resource and how it would be affected by the project. Indicate if a site survey of the resources has been conducted and describe the results. If the DNR Natural Heritage and Nongame Research program has been contacted give the correspondence reference number. ERDB 20010301
Describe measures to minimize or avoid adverse impacts.

The proposed site for the WWTF is located west of the City in an agricultural field. No known state-listed endangered, threatened, or special-concern species or sensitive ecological resources exist on or near the site. The DNR Natural Heritage and Nongame Research program was contacted and they confirmed that there are no known occurrences of rare species or natural communities in the area. See Exhibit 12 –Natural Heritage and Nongame Research Program Response Letter for a copy of the response letter.

- 12. Physical Impacts on Water Resources.** Will the project involve the physical or hydrologic alteration (dredging, filling, stream diversion, outfall structure, diking, and impoundment) of any surface waters such as a lake, pond, wetland, stream or drainage ditch? Yes No
If yes, identify water resource affected. Describe alternatives considered and proposed mitigation measures to minimize impacts. Give the DNR Protected Waters Inventory (PWI) number(s) if the water resources affected are on the PWI.

The wastewater from the City will be treated and disinfected prior to discharge to the Chetomba Creek. One wastewater discharge pipe is being proposed. Preliminary discharge standards were received from the MPCA (see Item 18.b). The proposed WWTF is designed to treat and disinfect the wastewater to meet the effluent limitations for a class 7 stream.

A water outlet structure will be placed in Chetomba Creek, adjacent to the proposed WWTF, to allow treated wastewater to flow into the creek. The construction procedure is as follows: An excavation about nine feet wide and eight feet long will be made for the placement of the pipe into the creek. Silt fencing will be placed around the excavation. The pipe will be backfilled with native soil (sand) and the outfall will be constructed with filter fabric and riprap to prevent erosion. The proposed effluent limitations for this facility have been developed to protect the designated uses of the creek.

- 13. Water Use.** Will the project involve installation or abandonment of any water wells, connection to or changes in any public water supply or appropriation of any ground or surface water (including dewatering)? Yes No
If yes, as applicable, give location and purpose of any new wells; public supply affected, changes to be made, and water quantities to be used; the source, duration, quantity and purpose of any appropriations; and unique well numbers and DNR appropriation permit numbers, if known. Identify any existing and new wells on the site map. If there are no wells known on site, explain methodology used to determine.

There are no existing wells on the site of the WWTF. The water demand for the WWTF is very small. Water is needed for cleaning component parts of the WWTF (UV unit bulbs) and landscape watering. There are three options to satisfy the water needs of the WWTF. An onsite well can be installed. A pressure sprayer can be purchased to use treated wastewater for cleaning. Water can be secured from the City water supply.

The quantity of water needed for the WWTF is very small. Approximately 100 gallons every six months is needed for cleaning various treatment system components. It is assumed that water will be supplied from the City's water system. During construction, water for establishing plants and trees for landscaping will be trucked to the site if needed.

- 14. Water-related land use management districts.** Does any part of the project involve a shoreland zoning district, a delineated 100-year flood plain, or a state or federally designated wild or scenic river land use district? Yes No
If yes, identify the district and discuss project compatibility with district land use restrictions.

- 15. Water Surface Use.** Will the project change the number or type of watercraft on any water body? Yes No
If yes, indicate the current and projected watercraft usage and discuss any potential overcrowding or conflicts with other uses.

- 16. Erosion and Sedimentation.** Give the acreage to be graded or excavated and the cubic yards of soil to be moved: 15.3 acres; 12,000 cubic yards. Describe any steep slopes or highly erodible soils and identify them on the site map. Describe any erosion and sedimentation control measures to be used during and after project construction.

Gravity Sewer Construction

Approximately six miles of gravity sewer pipe will be installed as part of this project. The pipe installation will consist of open trenching and directional boring. Proper slopes will be maintained inside all trenches. Where erosion control is needed, silt fences will be installed. All surfaces will be returned to original grades and slopes and properly seeded or surfaced.

Sewer construction results in open cuts for a relatively short time. Where construction requires street pavement removal, appropriate erosion control measures such as silt fences, storm-water inlet controls, and temporary cover will be used.

Wastewater Treatment Site

The septic tanks, constructed wetland cells, and sand filters proposed for the site will have graded slopes less than 4:1. If any slopes are steeper than 4:1, an erosion control blanket will be used. This should control any erosion and/or sedimentation that might occur onsite. Silt fencing will be also be used along the boundaries of the wetlands and sand filters in areas where grading is proposed. Planting, seeding and mulching will be done within two weeks of final grading.

Outfall Construction

A water outlet structure will be placed in Chetomba Creek, adjacent to the proposed WWTF site, to allow treated wastewater to flow into the creek. The construction procedure is as follows: An excavation about nine feet wide and eight feet long will be made for the placement of the pipe into the creek. Silt fencing will be placed around the excavation. The pipe will be backfilled with native soil (sand) and the outfall will be constructed with filter fabric and riprap to prevent erosion.

17. Water Quality - Surface Water Runoff.

- a. Compare the quantity and quality of site runoff before and after the project. Describe permanent controls to manage or treat runoff. Describe any storm water pollution prevention plans.

The quantity and quality of site runoff is not anticipated to change as a result of the project. At the treatment site, it will take approximately one to two months to construct the WWTF, which is approximately the same amount of time the land is bare during cultivation and planting of the crops under the current land use. The small area proposed for construction will result in no significant runoff and water quality impacts to the adjacent creek. Recommended practices in the Best Management Practices (BMP) Handbook for Minnesota will be used in constructing silt fences. After construction, the treatment wetlands are proposed to be planted with native vegetation.

- b. Identify routes and receiving water bodies for runoff from the site; include major downstream water bodies as well as the immediate receiving waters. Estimate impact runoff on the quality of receiving waters.

In excessive storm events, it is possible that runoff will pass overland through the silt fences to Chetomba Creek on the west and south sides of the site.

18. Water Quality – Wastewater.

- a. Describe sources, composition and quantities of all sanitary, municipal and industrial wastewater produced or treated at the site.

All wastewater, generated from the service area shown in Exhibit 4, will be treated by the proposed WWTF. Wastewater will be primarily domestic strength from the City's residential and commercial connections.

Population Growth

According to 2000 U.S. census results, Prinsburg's 2000 population is 458 people. Using a 20 percent growth factor due to the City's future growth plan, a new population for the City of Prinsburg has been estimated. The new projected population of Prinsburg in 2020 is 545 people.

Design Flow

Using the “Ten States Standards” of 75 gpd for dry weather flow, 100 gpd for wet weather flow and the newest projected population, the design flows for the City are summarized in the table below. The Peak Hourly Flow (PHF) is based on 2.5 times the average wet weather flow.

Wastewater Flow Projection

Flow	Gravity Sewer
Population Equivalent	545
ADW Flow (gpd)	40,875
AWW Flow (gpd)	54,500
PHF (gpm)	95

Notes:

- (1.) ADWF for gravity sewer is based on 75 gpd
- (2.) AWWF for gravity sewer is based on 100 gpd.
- (3.) PHF is based on a peaking factor of 2.5 as applied to the AWWF.

The City has a centralized water system and has been routinely monitoring water usage in town. Water usage from the well data show a range of flows from 27,500 to 30,700 gpd. Using the 2000 census data of 458 people and an average daily dry weather flow, the daily water usage per person averaged around 66 gpd. Based on these recorded flows, a 54,500 gpd wet weather flow will provide adequate capacity for future growth.

Design Loads

Maximum strength concentrations for domestic wastewater are typically used for designing WWTF's. *Wastewater Engineering - Treatment, Disposal, and Reuse*, Metcalf and Eddy, Inc., Third Edition, suggests using 0.18 lb/capita/day for the BOD₅, 0.20 lb/capita/day for Total Suspended Solids (TSS), 0.02 lb/capita/day for Total Nitrogen (TN), 0.007 lb/capita/day for ammonia nitrogen (NH₃-N), and 0.008 lb/capita/day for Total Phosphorus (TP) as maximum strength loading for typical residential wastewater.

The nature and strength of wastewater from the City consists of residential, commercial, and business connections. All wastewater (with the exception of one restaurant) is domestic strength. Consequently, wastewater entering the WWTF is believed to be primarily domestic in character. The projected maximum design concentrations and mass loadings per day are listed in the table below.

Design Loading

Parameter	Per Capita Factor (lb/cap/day)	Design Population (North)	Total Mass Loading (lb/day)
BOD ₅	0.18	545	98
TSS	0.20	545	109
NH ₃ -N	0.007	545	3.8
TN	0.02	545	10.9
TP	0.008	545	4.4

- b. Describe waste treatment methods or pollution prevention efforts and give estimates of composition after treatment. Identify receiving waters, including major downstream water bodies, and estimate the discharge impact on the quality of receiving waters. If the project involves on-site sewage systems, discuss the suitability of site conditions for such systems.

System Description

A gravity sewer collection system is proposed for the site. The gravity sewer mains will run along the roadway and in existing right-of-way. Each home or business will have a four-inch diameter gravity service connection to the main line.

The treatment process begins with a series of four, 20,000-gallon septic tanks sized according to Minn. R. ch. 7080. Following the septic tanks, the wastewater will be discharged into a metering manhole, which will split the flow evenly to four constructed wetlands. The constructed wetlands will include Forced Bed Aeration™ for enhanced treatment. After each wetland, the water will flow to one of two sand filter dosing tanks where it will be pumped to two sand filters. The water will flow vertically through the single pass sand filters for polishing. The water is then disinfected in the UV disinfection unit prior to being discharged to Chetomba Creek.

Septage Disposal

Solids from the septic tanks in a municipality are regulated in Minnesota as sewage sludge under the Code of Federal Regulations Chapter 40 Section 503. These regulations deal with the treatment and disposal of sewage sludge. Based on a service population of 545 people, the WWTF will generate approximately 25,600 gallons of septage per year (7,300 dry pounds per year). The City proposes to transfer the septage via truck to a permitted WWTF that accepts septage.

Surface-Water Discharge

The City’s WWTF is proposing a surface-water discharge to Chetomba Creek. The Chetomba Creek flows to the south and west approximately 25 miles to Hawk Creek, which eventually flows to the Minnesota River. Chetomba Creek is identified as a Limited Resource Value Water under MPCA rules. These use classifications include secondary body contact use, preserving groundwater for use as a potable water supply, protecting aesthetic qualities, industrial consumption, agriculture and wildlife, aesthetic enjoyment and navigation and other uses.

Preliminary effluent limitations were provided by the MPCA on May 12, 1998. The proposed effluent limitations for a continuous discharge are listed in the table below and the letter is included as Exhibit 11 – MPCA Preliminary Effluent Standards.

**Preliminary Discharge Standards to Chetomba Creek
issued by the MPCA**

Substance	Continuous Discharge Limiting Concentration	Controlled Discharge Limiting Concentration
CBOD5	15 mg/L	25 mg/L
Total Suspended Solids	30 mg/L	45 mg/L
Fecal Coliform	200 org / 100 ml	200 org / 100 ml
PH Range	6.0 – 9.0	6.0 – 9.0
Total Phosphorus	Monitoring	Monitoring

- c. If wastes will be discharged into a publicly owned treatment facility, identify the facility, describe any pretreatment provisions and discuss the facility’s ability to handle the volume and composition of wastes, identifying any improvements necessary.

N/A – the project is a publicly-owned WWTF.

- d. If the project requires disposal of liquid animal manure, describe disposal technique and location and discuss capacity to handle the volume and composition of manure. Identify any improvements necessary. Describe any required setbacks for land disposal systems.

N/A

19. Geologic hazards and soil conditions.

- a. Approximate depth (in feet) to Ground water: 15* minimum; 35 average.
 Bedrock: _____ minimum; 300 average.
 Describe any of the following geologic site hazards to ground water and also identify them on the site map: sinkholes, shallow limestone formations or karst conditions. Describe measures to avoid or minimize environmental problems due to any of these hazards.

*Due to the nature of impermeable soils in the City, it is possible that pockets of saturated soil will be encountered during sewer construction. Based on past construction activities in the City, no dewatering will be required for construction of the WWTF.

- b. Describe the soils on the site, giving SCS classifications, if known. Discuss soil granularity and potential for groundwater contamination from wastes or chemicals spread or spilled onto the soils. Discuss any mitigation measures to prevent such contamination.

According to the Kandiyohi County Soil Survey, several small pockets of varying soil units exist in the area to the west of the City. Glacial action created a wide variety of soil types around the Kandiyohi County. Glacial ice sheet ground up the material in the area, which resulted in a glacial till material consisting of an unsorted mixture of sand, silt, clay, and rock fragments. The City is located in the Olivia Till Plain area of Kandiyohi County with soils consisting of medium textured glacial till. The soils in the area, in general, are poorly drained, making soil infiltration a high cost alternative. The soils west of the City consist of soils listed in the table below:

Prinsburg Soils Descriptions from Kandiyohi County Soil Survey

Soil Series Name	Characteristics
Spicer silty clay loam (140)	Level, Poorly drained, Calcareous 1-3 ft to seasonal high water table
Webster silty clay loam (113)	Level, Poorly drained, 1-2 ft to seasonal high water table
Canisteo silty clay loam (444)	Level, Poorly drained, Calcareous 1-3 ft to seasonal high water table
Normania loam, 0-2% and 2-5% slopes (446A&B)	Moderately well drained, 3-6 ft to seasonal high water table
Ves-Swanlake loams, 2-6% slopes (954B)	Undulating, Well drained, high water capacity, moderate permeability
Canisteo-Harps loam (981)	Level, Poorly drained, 1-3 ft to seasonal high water table
Seaforth-Swanlake loam, 2-6% slopes (897B)	Moderately well drained, 3-6 ft to seasonal high water table

On December 17, 1998, the North American Wetland Engineering firm conducted a preliminary soils investigation at the site. In general, the soils were a combination of silty, sandy, clay loam in all thirty-eight of the soil pits. Mottling depth ranged from 24 inches to 44 inches. Soils investigation was based on the Kandiyohi County Soils Map as found in Exhibit 5. However, due to the size of the City and the soils available, a surface-water discharge is proposed and no further soil studies were completed.

To prevent wastewater in the constructed wetlands from seeping through the soils into the ground water, a PVC liner will be placed underneath. PVC liners typically last about 50 years.

20. Solid Wastes, Hazardous Wastes, Storage Tanks.

- a. Describe types, amounts and compositions of solid or hazardous wastes, including solid animal manure, sludge and ash, produced during construction and operation. Identify method and location of disposal. For projects generating municipal solid waste, indicate if there is a source separation plan; describe how the project will be modified for recycling. If hazardous waste is generated, indicate if there is a hazardous waste minimization plan and routine hazardous waste reduction assessments.

The City will generate septage as a byproduct of the WWTF. Septage is regulated as wastewater sludge under the U.S. Environmental Protection Agency 503 regulations. The City has the option of meeting the biosolids requirements for land spreading or to transport the septage to a municipal WWTF capable of handling septage. The nearest sewage treatment system capable of handling septage is the Hutchinson WWTF. Approximately 25,600 gallons of septage will be generated annually under full plant capacity. The septage plan for the City is to transfer to a permitted facility for final treatment and disposal.

- b. Identify any toxic or hazardous materials to be used or present at the site and identify measures to be used to prevent them from contaminating groundwater. If the use of toxic or hazardous materials will lead to a regulated waste, discharge or emission, discuss any alternatives considered to minimize or eliminate the waste, discharge or emission.

No toxic or hazardous materials are expected to be used during the construction or operation of the WWTF.

- c. Indicate the number, location, size and use of any above or belowground tanks to store petroleum products or other materials, except water. Describe any emergency response containment plans.

Four 20,000-gallon concrete septic tanks, sized per Minn. R. 7080, will be buried underground as part of the treatment process at the site. The septic tanks will be checked regularly. The septage will be pumped out annually and transferred to a permitted facility for final treatment and disposal.

- 21. Traffic.** Parking spaces added: 3 Existing spaces (if project involves expansion): 0
 Estimated total average daily traffic generated: Two vehicles Estimated maximum peak hour traffic
per month
 generated (if known) and its timing: _____ Provide an estimate of the impact on traffic congestion affected roads and describe any traffic improvements necessary. If the project is within the Twin Cities metropolitan area, discuss its impact on the regional transportation system.

No significant traffic will be generated by the new WWTF. An access road will be constructed to the treatment and disposal site in order to operate and maintain the WWTF. The only traffic due to the plant will be operation and maintenance vehicles.

Local City roads will temporarily be impacted while sewer lines are being installed. Every effort will be made to phase construction to limit the amount of time the road will be out of service. The contractor will be responsible to notify property owners of specific times and dates that road construction will be occurring adjacent to their property. The contractor will be responsible for traffic controls including signage, detours and flagging if necessary. Roads will be backfilled and compacted immediately after sewer trenching to allow for continued use of the road before asphaltting.

- 22. Vehicle-related Air Emissions.** Estimate the effect of the project's traffic generation on air quality, including carbon monoxide levels. Discuss the effect of traffic improvements or other mitigation measures on air quality impacts. Note: If the project involves 500 or more parking spaces, consult *EAW Guidelines* about whether a detailed air quality analysis is needed.

Based on one to two trips per month to the treatment and disposal area, there is no potential for the generation of excessive suspended particulates or carbon monoxide from the proposed WWTF because of vehicle traffic.

- 23. Stationary Source Air Emissions.** Describe the type, sources, quantities and compositions of any emissions from stationary sources of air emissions such as boilers, exhaust stacks or fugitive dust sources. Include any hazardous air pollutants (consult *EAW Guidelines* for a listing), any greenhouse gases (such as carbon dioxide, methane, and nitrous oxides), and ozone-depleting chemicals (chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons or sulfur hexafluoride). Also describe any proposed pollution prevention techniques and proposed air pollution control devices. Describe the impacts on air quality.

The project does not involve the construction of any stationary sources of air emissions.

- 24. Odors, noise and dust.** Will the project generate odors, noise or dust during construction or during operation? Yes No

If yes, describe sources, characteristics, duration, quantities or intensity and any proposed measures to mitigate adverse impacts. Also identify locations of nearby sensitive receptors and estimate impacts on them. Discuss potential impacts on human health or quality of life. (Note: fugitive dust generated by operations may be discussed at item 23 instead of here.)

Odors

WWTF's have the potential for generating odors under upset conditions and during maintenance. In the proposed WWTF, all wastewater is contained in underground tanks, in the constructed wetland, and in the sand filter until it is fully treated and released to the environment. The wetland and sand filter are covered with a mulch layer, which helps to eliminate odors. During septic tank pumping, the greatest potential for odors exists. Septic tank pumping will occur, at most, annually over a week period. The closest resident to the proposed WWTF is 422 feet.

Noise

Construction activities generate noise and exhaust that can be a problem for neighboring residents. To minimize the impact of noise, construction activities will be confined to the daylight hours of 7:00 a.m. to 7:00 p.m. Proper maintenance of contractor's equipment will also prevent excessive noise and exhaust.

Dust

Fugitive dust is a potential air quality impact. Standard dust control measures will be implemented to minimize the potential for construction related dust. Standard dust control measures include watering roads during dry periods, covering haul vehicles, using bedliners in haul vehicles, confining loading and unloading areas, and using traffic control measures such as reduced speeds and direct routes.

25. Nearby resources. Are any of the following resources on or in proximity to the site?

- a. Archaeological, historical, or architectural resources? Yes No
- b. Prime or unique farmlands or land within an agricultural preserve? Yes No
- c. Designated parks, recreation areas, or trails? Yes No
- d. Scenic views and vistas? Yes No
- e. Other unique resources? Yes No

If yes, describe the resource and identify any project-related impacts on the resources. Describe any measures to minimize or avoid adverse impacts.

The Minnesota Historical Society was contacted to search their inventory of historic and archeological properties database. In a letter dated June 27, 2001, the agency stated that there are no known historical or archeological properties in the area that will be affected by the proposed project.

According to the Soil Survey of Kandiyohi County, all soils in the proposed project area are classified as prime farmland. Approximately 7.5 acres of cropland will be lost as a result of the proposed project. Land purchased for backup and future expansion will be left in agricultural use until it is needed.

26. Visual impacts. Will the project create adverse visual impacts during construction or operation? Such as glare from intense lights, lights visible in wilderness areas and large visible plumes from cooling towers or exhaust stacks? Yes No

If yes, explain.

27. Compatibility with plans and land use regulations. Is the project subject to an adopted local comprehensive plan, land use plan or regulation, or other applicable land use, water, or resource management plan of a local, regional, state or federal agency? Yes No

If yes, describe the plan, discuss its compatibility with the project and explain how any conflicts will be resolved. If no, explain.

A new sewer use ordinance in the City will be prepared that addresses the new wastewater collection, treatment and disposal system.

The City is also working towards separating clear water flow from wastewater in the new gravity sewer collection system. The City will require that all sump pumps, roof leaders, footing drains etc., discharge to available existing storm water lines or to yards. Clearwater flow will not be allowed to be connected to the new gravity sewer.

28. Impact on infrastructure and public services. Will new or expanded utilities, roads, other infrastructure or public services be required to serve the project? Yes No

If yes, describe the new or additional infrastructure or services needed. (Note: any infrastructure that is a connected action with respect to the project must be assessed in the EAW; see *EAW Guidelines* for details.)

As part of the project, a rehabilitated gravity sewer collection system will be constructed in the City. Electric service will be supplied to the WWTF from existing transmission lines adjacent to City.

An access road will be constructed to the treatment and disposal site in order to operate and maintain the WWTF. Access will be controlled and unauthorized vehicles will be prohibited. Signage, landscaping and temporary fencing will be installed to control the access. In addition, the control building, panels and equipment will be locked to secure access.

- 29. Cumulative impacts.** Minn. R. 4410.1700, subp. 7, item B requires that the RGU consider the “cumulative potential effects of related or anticipated future projects” when determining the need for an environmental impact statement. Identify any past, present or reasonably foreseeable future projects that may interact with the project described in this EAW in such a way as to cause cumulative impacts. Describe the nature of the cumulative impacts and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to cumulative impacts (or discuss each cumulative impact under appropriate item(s) elsewhere on this form).

No cumulative impacts are anticipated. The proposed WWTF is designed to treat wastewater flows from the 20 percent projected population growth by the year 2020 (estimated 87 additional people). Future development projects will have a combined secondary effect to the area. The project will serve properties that are forecasted to be developed, with or without the construction of the project.

- 30. Other Potential Environmental Impacts.** If the project may cause any adverse environmental impacts not addressed by items 1 to 28, identify and discuss them here, along with any proposed mitigation.

None have been identified.

- 31. Summary of issues.** List any impacts and issues identified above that may require further investigation before the project is begun. Discuss any alternatives or mitigative measures that have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.

Over eight combinations of wastewater collection, treatment and disposal options were evaluated for the City. Based on capital and life cycle costs, operation complexity, environmental sensitivity and the City’s goals, a system with a gravity sewer, constructed wetland with sand filter polishing unit and a surface-water discharge was selected. This decision was based on the following:

Gravity Sewer

- New City clear water policy makes gravity sewer more economically feasible
- Flexibility for future growth
- Reduced amount of operation and maintenance of sewer system

Subsurface Flow Wetland

- High level of treatment and solids removal capabilities for disinfection
- Low operation and maintenance fees
- Can be constructed on land close to and currently owned by the City

Continuous Discharge to Chetomba Creek

- Limited amount of suitable infiltration soils
- Cost effective compared to soil infiltration

RGU CERTIFICATION.

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minn. R. 4410.0200, subps. 9b and 60, respectively.
- Copies of this EAW are being sent to the entire EQB distribution list.

Name and Title of Signer:

**Beth G. Lockwood, Supervisor, Environmental Review Unit
Operations and Environmental Review Section
Regional Environmental Management Division**

Date:

The format of the Environmental Assessment Worksheet was prepared by the staff of the Environmental Quality Board at Minnesota Planning. For additional information, worksheets or for *EAW Guidelines*, contact: Environmental Quality Board, 658 Cedar St., St. Paul, MN 55155, 651-296-8253, or at their Web site <http://www.mnplan.state.mn.us>