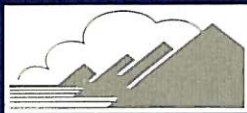


**0002-41 - CRWD/Lake Augusta Eurasian Milfoil  
Control**

R.001 -- Engineers Report September 2001 -  
Lake Augusta Eurasian Water Milfoil  
Control Project No. 01-2

# Engineers Report

Lake Augusta Eurasian  
Water Milfoil Control  
Project No. 01-2



**Wenck**

**Prepared for**

**Clearwater River  
Watershed District**

**September 2001**

---

# Engineers Report

Lake Augusta Eurasian  
Water Milfoil Control  
Project No. 01-2

Clearwater River  
Watershed District

Wenck File #0002-41

Prepared for:

**CLEARWATER RIVER WATERSHED  
DISTRICT**  
P.O. Box 481  
Annandale, MN 55302

Prepared by:

**WENCK ASSOCIATES, INC.**  
1800 Pioneer Creek Center  
P.O. Box 249  
Maple Plain, Minnesota 55359-0249  
(763) 479-4200

September 2001

*Revised November 16, 2001*



**Wenck**

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## Table of Contents

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1.0	PURPOSE.....	1-1
2.0	INTRODUCTION .....	2-1
3.0	PROJECT LOCATION.....	3-1
4.0	WATER QUALITY BENEFITS.....	4-1
5.0	PROJECT NEED .....	5-1
6.0	PROJECT COMPATIBILITY WITH STATE AND FEDERAL LAW .....	6-1
6.1	Watershed District Authority .....	6-1
6.2	Content of the Engineer's Report .....	6-1
6.3	Conformance with Overall Plan.....	6-1
6.4	Other Requirements .....	6-2
7.0	ECONOMIC CONSIDERATION AND BENEFITS.....	7-1
7.1	Existing and Anticipated Benefits .....	7-1
7.2	Estimated Costs.....	7-1
8.0	ENVIRONMENTAL ASSESSMENT .....	8-1
9.0	FINANCING .....	9-1
10.0	FINAL RECOMMENDATIONS.....	10-1
11.0	REFERENCES .....	11-1

---

## Table of Contents (Cont.)

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### **TABLE**

1. Estimated Costs

### **FIGURE**

1. Lake Augusta – Impacted Areas

### **APPENDICES**

- A Petition of August 8, 2001 from Lake Augusta Association to the Clearwater River Watershed District
- B Environmental Assessment Worksheet
- C Listing of Benefiting Properties



**ENGINEERS REPORT**

**for**

**LAKE AUGUSTA  
EURASIAN WATER MILFOIL CONTROL PROJECT NO. 01-2**

**PREPARED FOR:** Clearwater River Watershed District  
P.O. Box 481  
Annandale, Minnesota 55302

**BOARD OF MANAGERS:** Richard Eckman, President  
Roland Froyen, Vice President  
John Tracy, Secretary  
Marvin Brunsell, Treasurer  
Clarence Klein, Manager

**PREPARED BY:** WENCK ASSOCIATES, INC.  
1800 Pioneer Creek Center  
P.O. Box 249  
Maple Plain, Minnesota 55359-0249  
Telephone: (763) 479-4200  
Facsimile: (763) 479-4242

Wenck File #0002-41

I hereby certify that this plan, specification, or report was prepared by me  
or under my direct supervision and that I am a duly registered  
Professional Engineer under the laws of the State of Minnesota.

Date:

9-8-01

Norman C. Wenck, P.E.

Registration No: 8946

---

## **1.0 Purpose**

---

On August 8, 2001, the Board of Managers of the Clearwater River Watershed District (CRWD) received a petition (Appendix A) relating to Eurasian water milfoil control. At the meeting the Board ordered the District Engineer to prepare an Engineers Report for the project. This document is intended to fulfill the requirements of Minnesota Statutes Section 103D.335 for a project.

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## 2.0 Introduction

---

Eurasian water milfoil (EWM) is a European aquatic plant that has been introduced accidentally to North America and is therefore an exotic species. EWM forms thick underwater stands of tangled stems and vast mats of vegetation at the water surface. In addition, EWM causes nuisance problems and interferes with boating, fishing, and swimming activities. If its growth and spread are left unchecked, EWM can have long-term deleterious effects on lake water quality.

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## 3.0 Project Location

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Lake Augusta is located in Sections 11 and 14 of T121N, R28W in Stearns and Wright Counties of Minnesota.

Lake Augusta has a surface area of 178 acres, a maximum depth of 82 feet, a mean depth of 25.3 feet, an approximate volume of 4,500 acre-feet and a drainage area of 68,000 acres. Its primary inflow is from the Clearwater River, which flows through an upstream chain of smaller lakes, then through Lake Augusta, then through Clearwater Lake, finally discharging downstream into the Mississippi River. In 1997, EWM was discovered in Lake Augusta. Currently, EWM impacts approximately 5 acres of the lake in near-shore areas (Figure 1).



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## 4.0 Water Quality Benefits

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The seasonal decay of EWM's huge biomass causes oxygen depletion, which in turn accelerates the release of phosphorus from the bottom sediments to the water column. EWM also upsets the fish community and may favor the growth of rough fish over game fish, thereby increasing the internal loading through bio-perturbation. Burton et al. (1979) estimated a reduction of phosphorus loading ranging from 0.15 to 1.20 grams per square meter per year for eutrophic lakes in the northern United States (such as Lake Augusta) as a result of removal of EWM and similar aquatic plants.

Even more importantly, if left unchecked, EWM could reasonably be expected to infect 50 to 60 acres of Lake Augusta. Reducing and eliminating EWM will improve the lake's recreational value (Cooke et al., 1986).

---

## 5.0 Project Need

---

In order to prevent further spreading of EWM, eliminate existing EWM, reduce internal phosphorus loading, and improve lake water quality, the herbicide 2,4-D can be applied to the lakes areas that are impacted by EWM. The application of 2,4-D is essentially an interim measure, even though it may successfully eliminate most of the now existing EWM stands. At present there is no <sup>known</sup> treatment or technique that is 100 percent effective at eliminating EWM. Therefore, a five-year program is envisioned; at the end of that period, a program review will lead to either an extension or an appropriate modification of the EWM program.

The minimum sustained 2,4-D concentration required for controlling EWM has been determined experimentally to be 0.05 to 0.10 milligrams per liter (mg/l) (Westerdahl and Hall, 1983). However, application rates of 20 to 40 pounds per acre (Frank, 1972) and 100 pounds per acre (Kretsch, 1989) have been cited as typical. The lower range was equated to average in-lake concentrations of 1.8 to 3.6 mg/l, based on a depth of 4 feet (Frank, 1972). An average depth of 7 to 8 feet is probably typical of the higher rate, and this implies an average in-lake concentration of about 5 mg/l. The mean depth for the Lake Augusta is approximately 23.5 feet, and the average depth of the impacted areas is approximately 10 feet (Figure 1). Therefore, 125 pounds of 2,4-D could be applied for each of the impacted acres of lake surface. The Lake Augusta Association has committed to providing the labor required for the chemical application (Appendix A).

---

## **6.0 Project Compatibility with State and Federal Law**

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### **6.1 WATERSHED DISTRICT AUTHORITY**

The Clearwater River Watershed District's authority to take action on the implementation of this project is found in the Minnesota Watershed Act as taken from the Minnesota Statutes chapter 103D.335, manager's powers and duties.

### **6.2 CONTENT OF THE ENGINEER'S REPORT**

This report is prepared in accordance with the Minnesota Statute 103D.711 Engineer's Report, under the Minnesota Watershed Act.

### **6.3 CONFORMANCE WITH OVERALL PLAN**

The Clearwater River Watershed District requires projects undertaken under its jurisdiction to be consistent with the overall plan. This project is consistent with the overall plan as specifically addressed in Section 3.1, General Objectives. Section 3.1.D allows the District to provide for water quality improvements.

#### **6.4 OTHER REQUIREMENTS**

A permit will be required from the Minnesota Department of Natural Resources. A permit application will be prepared, sent to the Department and a permit received prior to the onset of treatment activities.



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## **7.0 Economic Consideration and Benefits**

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### **7.1 EXISTING AND ANTICIPATED BENEFITS**

The project will result in reduced phosphorus loading to Lake Augusta. This will have an effect of less vegetation growth and clearer water. The property values of the lots will increase in value after the installation of a community septic system.

### **7.2 ESTIMATED COSTS**

Table 1 presents the estimated costs of the recommended alternative.

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## **8.0 Environmental Assessment**

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The environmental effects of the project were assessed by completing an Environmental Assessment Worksheet (EAW) made available by the Environmental Quality Board. The EAW is included in Appendix B.

The project will reduce phosphorus loading to Lake Augusta and the Clearwater River Watershed District.

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## **9.0      Financing**

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Financing for the project will be obtained by assessing benefited property owners. It is anticipated that the benefited properties shall be assessed based on a per lot basin. A listing of benefited property owners and tax parcel number(s) is shown in Appendix C.

---

## 10.0 Final Recommendations

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It is recommended that EWM, currently present in at least 5 acres of the Lake Augusta and is expected to increase if uncontrolled and can be controlled by applying 2,4-D for the next <sup>four</sup> five years, or until a better treatment or control practice is available.

The control of EWM is necessary to improve the water quality of Lake Augusta. Without such control the internal phosphorus loading in Lake Augusta could increase beyond the total (internal plus external) loading goal for the lake. To achieve control of the milfoil, application of the selected herbicide 2,4-D is the most practical and effective technique at present. The herbicide is to be applied on 5 plus acres of the lake that is impacted by EWM, at a rate of 125 pounds per acre. The impacted areas are shown in Figure 1.

Finally, a yearly evaluation of the EWM population and its spreading, and the treatment procedure is recommended in order to successfully control the EWM problem.

The recommended project has been shown to be feasible and in the interest of the Public, therefore, it is recommended that the project be approved and implemented as soon as practical.



---

## 11.0 References

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- Burton, T.M., King, D.L., and Ervin, L.L. 1979. Aquatic plant harvesting as a lake restoration technique. In *Lake Restoration: Proceedings of a National Conference*, U.S. Environmental Protection Agency, EPA-440/S-79-001, 177-185.
- Cooke, G.D., Welch, E.B., Peterson, S.A., and Newroth, P.R. 1986. Lake and Reservoir Restoration, Boston: Ann Arbor Science, 302.
- Frank, P.A. 1972. Herbicidal Residues in Aquatic Environments. In *Fate of Organic Pesticides in the Aquatic Environment: A Symposium of the American Chemical Society*, Los Angeles, March 29-31. 1974.
- Krestch, K., Nov. 27, 1989. Personal Communication with J. Erdmann. (Mr. Krestsch is President of Lake Restoration, Hamel, Minnesota).
- Westerdahl, H.E., and Hall, J.F. 1983. Threshold 2,4-D Concentrations for Control of Eurasian Watermilfoil and Sage Pondweed. *Journ. Aquat. Plant Manage.* 21:22-5.

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## Tables

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**TABLE 1**  
**ESTIMATED COSTS**

It is expected that the 2,4-D treatment will cost approximately \$19,000 for the years 2002 through 2006. The following tables shows the estimated expense for the five-year program.

<u>Item</u>	<u>Estimated Expense</u>
Public Notice	\$ 200
Public Hearing	\$ 200
Engineering	\$ 1,600
Legal/Administrative	\$ 400
Chemical (2,4-D) <sup>a</sup>	
1 <sup>st</sup> Year (2002)	\$ 2,100
2003	\$ 2,200
2004	\$ 2,300
2005	\$ 2,400
2006	\$ 2,550
Volunteer Expenses	\$ 1,500 <sup>a</sup>
Equipment	\$ 2,500 <sup>a</sup>
Permits	\$ 1,000 <sup>a</sup>
TOTAL	\$ 19,000

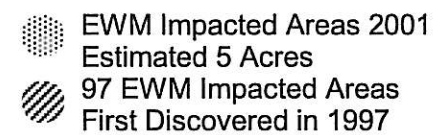
<sup>a</sup>5 Year Costs.

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## Figures

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## **Appendix A**

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**Petition of August 8, 2001 from  
Lake Augusta Association to the  
Clearwater River Watershed District**

August 8, 2001

Board of Managers  
Clearwater River Watershed District  
Box 481  
Annandale MN 55302

Gentlemen:

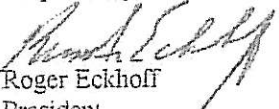
Attached is a petition from the Lake Augusta Association requesting that a project be established for the control of Eurasian Watermilfoil in Lake Augusta.

The petition is signed by 30 Lake Augusta property owners. There are approximately 91 individual property owners on the lake, 23 in Stearns County and 68 in Wright County.

Also included is a check for \$2000.00 as a petition deposit, as required by Minnesota Statutes.

We look forward to your prompt consideration of our petition.

Respectfully,

  
Roger Eckhoff  
President  
Lake Augusta Association

Attachments

## PETITION

### TO THE CLEARWATER RIVER WATERSHED DISTRICT BOARD

The undersigned, being at least 25 percent of the property owners or the owners of more than 25 percent of the property within the limits of the area proposed to be improved (the "Petitioners"), hereby petition the Clearwater Watershed District (the "Watershed District"), pursuant to Minn. Statutes Section 103D.705, to undertake a project described as follows:

#### ***1. Description Of The Proposed Project And The Purpose To Be Accomplished:***

The Lake Augusta Association, a non profit corporation, requests that the Clearwater Watershed District establish a project for the chemical control of Eurasian watermilfoil in Lake Augusta using chemicals approved by the Minnesota Department of Natural Resources. Eurasian Watermilfoil will choke out native aquatic plants thereby upsetting the natural ecosystems in the lake.

Measures must be taken to reduce the adverse affects of Eurasian Watermilfoil on recreational opportunities and aquatic communities in Lake Augusta and to help slow the spread of this exotic to other lakes. In June, 2001 the Lake Augusta Association, after securing the necessary DNR permit, treated approximately 1.5 acres of emergent milfoil near the mouth of the Clearwater River at a cost of \$520 for chemicals and permits.

#### ***2. Description Of The Property Where the Proposed Project Passes:***

In addition to beds of emergent Eurasian milfoil along the shoreline of individual property owners, there are large beds of milfoil where the Clearwater River enters Lake Augusta and on the sunken island in the middle of the lake. It is expected that the infestation will expand to include most of the shoreline of the lake and the remaining shallower areas away from the shoreline. Soon this milfoil will begin to infest the channel between lakes Augusta and Clearwater.

#### ***3. A General Description Of The Part Of The Watershed District That Will Be Affected:***

It is intended to treat the major beds of milfoil within Lake Augusta, wherever they appear, as permitted by the DNR and individual property owners.

#### ***4. Necessity Of The Project:***

Lake Augusta appears on the most recent list of Infested Waters in Minnesota, (April 24, 2000), as being infested with Eurasian watermilfoil. Although the lake has contained this milfoil for some time, in the year 2001 the infestation increased significantly.

The use of biological control agents, including native weevils, to reduce the abundance of Eurasian watermilfoil is a long-term research program that may require 10 years or more, as reported by the DNR.

#### ***5. Estimated Cost Of The Project:***

For the first year:

CHEMICALS	\$2100.00
PERMITS	200.00
APPLICATION EQUIPMENT LEASES	500.00
GAS, OIL, INSURANCE	300.00
CRWD EXPENSES	400.00
TOTAL FIRST YEAR COST	\$3500.00

Applying a 5% per year inflation factor to the above cost, the total project cost is estimated to be \$19,000 over the period of 5 years.

Notes: a) Chemical cost is estimated from data obtained from the Clearwater Lake program where 125 lbs./acre of Navigate aquatic herbicide (a 2,4,D product) is applied at a cost of \$2.20/lb. It is estimated that 7.5 acres of Lake Augusta will be treated with this herbicide.

b) The CRWD expenses are estimated to total \$2000 in project startup costs for public hearing notices, legal review fees and development of a required engineering plan. The reimbursement of this cost is expected to be spread over the 5-year project life.

## 6. Execution Of The Project:

The Lake Augusta Association will provide all of the labor necessary to apply the chemicals to the infested areas as approved by permits. The Association will obtain the necessary DNR permits prior to doing the work and the Association will arrange to rent or lease the equipment to apply the chemicals in an approved manner.

The Lake Augusta Association will coordinate activities with the Clearwater Lake Eurasian Watermilfoil management program to ensure the most effective control of the infestation, to obtain the most cost beneficial purchase of chemicals, and to have access to personnel having hazardous materials handling licenses, if required:

## 7. Financing Of The Project:

The project is to be financed by a special assessment established by the CRWD. The annual assessment will be a maximum of 20% of the total cost of the 5-year project, equally distributed to all of the property owners having lakeshore on Lake Augusta.

If milfoil treatment is required beyond the 5 year period it may be necessary to continue an annual maintenance assessment that is not to exceed 20% of the total project cost.

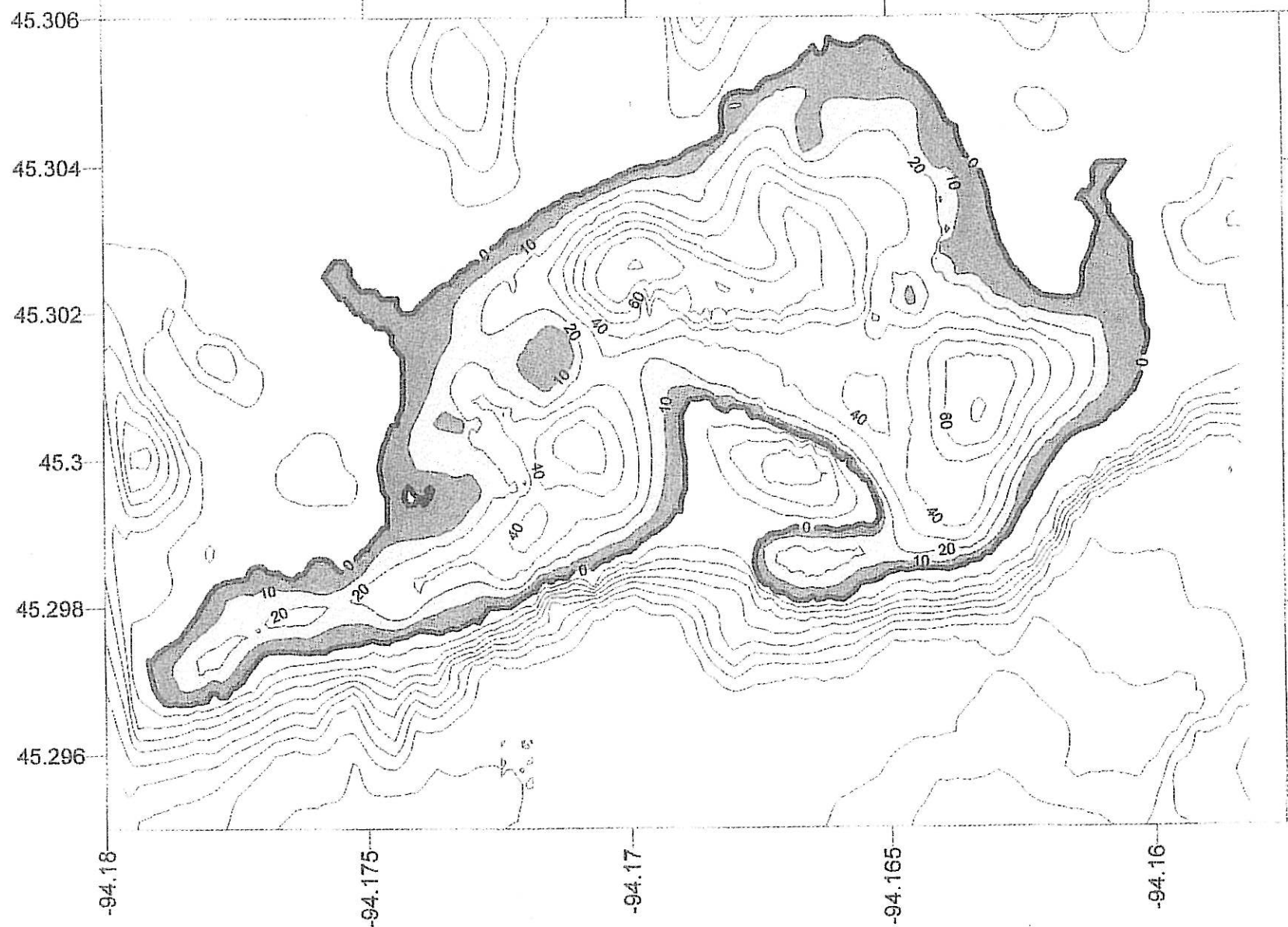
The Petitioner hereby agrees that it will pay all costs and expenses that may be incurred by the Watershed District if the proceedings are dismissed or a construction contract is not awarded for the proposed project.

In witness whereof, the undersigned have executed the Petition as of the 27<sup>th</sup> day of Aug., 2001.

1. <u>Mark S. Range</u>	21. <u>Carol Allen</u>
2. <u>Barbara L. Hays</u>	22. <u>Carol Allen</u>
3. <u>John J. Longpradi</u>	23. <u>Carol Allen</u>
4. <u>John J. Longpradi</u>	24. <u>Carol Allen</u>
5. <u>John J. Longpradi</u>	25. <u>Carol Allen</u>
6. <u>John J. Longpradi</u>	26. <u>Carol Allen</u>
7. <u>John J. Longpradi</u>	27. <u>Carol Allen</u>
8. <u>John J. Longpradi</u>	28. <u>Carol Allen</u>
9. <u>John J. Longpradi</u>	29. <u>Carol Allen</u>
10. <u>John J. Longpradi</u>	30. <u>Carol Allen</u>
11. <u>John J. Longpradi</u>	31. <u>Carol Allen</u>
12. <u>John J. Longpradi</u>	32. <u>Carol Allen</u>
13. <u>John J. Longpradi</u>	33. <u>Carol Allen</u>
14. <u>John J. Longpradi</u>	34. <u>Carol Allen</u>
15. <u>John J. Longpradi</u>	35. <u>Carol Allen</u>
16. <u>John J. Longpradi</u>	36. <u>Carol Allen</u>
17. <u>John J. Longpradi</u>	37. <u>Carol Allen</u>
18. <u>John J. Longpradi</u>	38. <u>Carol Allen</u>
19. <u>John J. Longpradi</u>	39. <u>Carol Allen</u>
20. <u>John J. Longpradi</u>	40. <u>Carol Allen</u>



# LAKE AUGUSTA



(Depths in Feet)

---

## **Appendix B**

---

### **Environmental Assessment Worksheet**

# Environmental Assessment Worksheet (EAW)

## Note To Preparers

This worksheet is to be completed by the Responsible Governmental Unit (RGU) or its agents. The project proposer must supply any reasonably accessible data necessary for the worksheet, but is not to complete the final worksheet itself. If a complete answer does not fit in the space allotted, attach additional sheets as necessary.

For assistance with this worksheet contact the Minnesota Environmental Quality Board (EQB) at (612) 296-8253 or (toll-free) 1-800-652-9747 (ask operator for the EQB environmental review program) or consult "EAW Guidelines," a booklet available from the EQB.

## Note to Reviewers

Comments must be submitted to the RGU (see items 3) during the 30-day comment period following notice of the EAW in the EQB Monitor. (Contact the RGU or the EQB to learn when the comment period ends.) Comments should address the accuracy and completeness of the information, potential impacts that may warrant further investigation, and the need for an EIS. If the EAW has been prepared for the scoping of an EIS (see item 4), comments should address the accuracy and completeness of the information and suggest issues for investigation in the EIS.

- |  |  |                |  |
|--|--|----------------|--|
| 1. Project Title   | Lake Augusta Eurasian Water Milfoil Control Project No. 01-2 |                |  |
| 2. Proposer  | Clearwater River Watershed District                          | 3. RGU         | Clearwater River Watershed District  |
| Contact person   | Richard Eckman   | Contact person | Norman C. Wenck  |
| Address  | P.O. Box 481<br>Annandale, MN 55302                          | and title      | Project Manager  |
| Phone  | (320) 529-1229   | Address        | Wenck Associates<br>1800 Pioneer Creek Center<br>P.O. Box 249<br>Maple Plain, MN 55359 |
|  |  | Phone          | (763) 479-4201   |
|  |  | FAX            | (763) 479-4242   |
| 4. Reason for EAW Preparation  |  |                |  |
| <input type="checkbox"/> EIS scoping <input checked="" type="checkbox"/> mandatory EAW <input type="checkbox"/> citizen petition <input type="checkbox"/> RGU discretion |  |                |  |
| <input type="checkbox"/> Proposed volunteered  |  |                |  |
| If EAW or EIS is mandatory give EQB rule category number(s)  |  |                |  |



## 5. Project Location

Section 11 Township 121N Range 28W

County Wright City/Township Fairhaven

Section 14 Township 121N Range 28W

County Stearns/Wright City/Township Southside

*Attach copies of each of the following to the EAW:*

- a. a county map showing the general location of the project;*
- b. copy(ies) of USGS 7.5 minute, 1:24,000 scale map (photocopy is OK) indicating the project boundaries;*
- c. a site plan showing all significant project and natural features.*

6. **Description** *Give a complete description of the proposed project and ancillary facilities (attach additional sheets as necessary). Emphasize construction and operation methods and features that will cause physical manipulation of the environment or produce wastes. Indicate the timing and duration of construction activities.*

The control of EWM is necessary to improve water quality of Lake Augusta. Without such control the internal phosphorus loading in Lake Augusta could increase beyond the total (internal plus external) loading goal for the lake. To achieve control of the milfoil, application of the selected herbicide 2,4-D is the most practical and effective technique at present. The herbicide is to be applied on 5 plus acres of the lake that is impacted by EWM, at a rate of 125 pounds per acre. The impacted areas are shown in Figure 1.

*Provide a 50 or fewer abstract for use in EOB Monitor notice:*

## 7. Project Magnitude Data

*Total Project Area (acres)* 178 acres *or Length (miles)*

*Number of Residential Units*

*Unattached* \_\_\_\_\_ *Attached*

*Commercial/Industrial/Institutional Building Area (gross floor space)*

*Total* 0 *square feet;*

*Indicate area of specific uses:*

*Office* NA *Manufacturing* NA

*Retail* NA *Other Industrial* NA

*Warehouse* NA *Institutional* NA

*Light Industrial* NA *Agricultural* NA

*Other Commercial (specify)* NA

*Building Height(s)* NA

**8. Permits and Approvals Required** *List all known local, state, and federal permits, approvals, and funding required:*

Unit of Government	Type of Application	Status
Minnesota Department of Natural Resources	Chemical Treatment of Lake for Eurasian Water Milfoil	Pending

**9. Land Use** *Describe current and recent past land use and development of the site and on adjacent lands. Discuss the compatibility of the project with adjacent and nearby land uses; indicate whether any potential conflicts involve environmental matters. Identify any potential environmental hazard due to past land uses, such as soil contamination or abandoned storage tanks.*

**10. Cover Types** *Estimate the acreage of the site with each of the following cover types before and after development (before and after totals should be equal): N/A*

**11. Fish, Wildlife, and Ecologically Sensitive Resources**

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

The project site is located Lake Augusta. The project will improve water quality.

- b. *Are there any state-listed endangered, threatened, or special-concern species; rare plant communities; colonial waterbird nesting colonies; native prairie or other rare habitat; or other sensitive ecological resources on or near the site? [ ] Yes [X] No. If yes, describe the resource and how it would be affected by the project. Indicate if a site survey of the resources was conducted. Describe measures to be taken to minimize or avoid adverse impacts.*

**12. Physical Impacts on Water Resources** *Will the project involve the physical or hydrologic alteration (dredging, filling, stream diversion, outfall structure, diking, impoundment) of any surface water (lake, pond, wetland, stream, drainage ditch)? [ ] Yes [X] No. If yes, identify the water resource to be affected and describe: the alteration, including the construction process; volumes of dredged or fill material; area affected; length of stream diversion; water surface area affected; timing and extent of fluctuations in water surface elevations; spoils disposal sites; and proposed mitigation measures to minimize impacts.*

**13. Water Use**

- a. Will the project involve the installation or abandonment of any wells? ☐ Yes ☒ No. For abandoned wells give the location and Unique well number. For new wells, or other previously unpermitted wells, give the location and purpose of the wells and the Unique well number (if known).
- b. Will the project require an appropriation of ground water or surface water (including dewatering)? ☐ Yes ☒ No. If yes, indicate the source, quantity, duration, purpose of the appropriation and DNR water appropriation permit number of any existing appropriation. Discuss the impact of the appropriation on ground water levels.
- c. Will the project require connection to a public water supply? ☐ Yes ☒ No  
If yes, identify the supply, the DNR water appropriation permit number of the supply, and the quantity to be used.

- 14. Water-related Land Management Districts** Does any part of the project site 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 the compatibility of the project with the land use restrictions of the district.

- 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 users or fish and wildlife resources.

- 16. Soils** Approximate depth (in feet) to:

Groundwater: minimum \_\_\_\_\_ average \_\_\_\_\_. Bedrock: minimum \_\_\_\_\_ average \_\_\_\_\_. Describe the soils on the site, giving SCS classifications, if known. (SCS interpretations and soil boring logs need not be attached.)

N/A.

- 17. Erosion and Sedimentation** Give the acreage to be graded or excavated and the cubic yards of soil to be moved:

\_\_\_\_\_ acres; \_\_\_\_\_ cubic yards. Describe any steep slopes or highly erodible soils and identify them on the site map. Describe the erosion and sedimentation measures to be used during and after construction of the project.

N/A.

**18. Water Quality - Surface Water Runoff**

- a. Compare the quantity and quality of site runoff before and after the project. Describe methods to be used to manage and/or treat runoff.

N/A.

- b. Identify the route(s) and receiving water bodies for runoff from the site. Estimate the impact of the runoff on the quality of the receiving waters. (If the runoff may affect a lake consult "EAW Guidelines" about whether a nutrient budget analysis is needed).

N/A.

## 19. Water Quality - Wastewaters

- a. Describe sources, quantities, and composition (except for normal domestic sewage) of all sanitary and industrial wastewaters produced or treated at the site.

N/A.

- b. Describe any waste treatment methods to be used and give estimates of composition after treatment, or if the project involves on-site treatment systems, discuss the suitability of the site conditions for such systems. Identify receiving waters (including ground water) and estimate the impact of the discharge on the quality of the receiving waters. (If the discharge may affect a lake consult "EAW Guidelines" about whether nutrient budget analysis is needed.)

N/A.

- c. If wastes will be discharged into a sewer system or pretreatment system, identify the system and discuss the ability of the system to accept the volume and composition of the wastes. Identify any improvements which will be necessary.

N/A.

## 20. Ground Water - Potential for Contamination

- a. Approximate depth (in feet) to groundwater: 35 ft. minimum; 40 ft. average.

- b. Describe any of the following site hazards to groundwater and also identify them on the site map: sinkholes; shallow limestone formations/karst conditions; soils with high infiltration rates; abandoned or unused wells. Describe measures to avoid or minimize environmental problems due to any of these hazards.

No specific hazards have been identified which could potentially impact groundwater and no known abandoned or unused wells are on the site.

- c. Identify any toxic or hazardous materials to be used or present on the project site and identify measures to be used to prevent them from contaminating groundwater.

2,4-D will be used at the project site under the direction and permit from the MDNR.

## 21. Solid Wastes; Hazardous Wastes; Storage Tanks

- a. Describe the types, amounts, and compositions of solid or hazardous wastes to be generated, including animal manures, sludges and ashes. Identify the method and location of disposal. For projects generating municipal solid waste indicate if there will be a source separation plan; list type(s) and how the project will be modified to allow recycling.

N/A.

- b. Indicate the number, location, size and use of any above or below ground tanks to be used for storage of petroleum products or other materials (except water).

N/A.

22. Traffic Parking spaces added 0; Existing spaces (if project involves expansion) 0; Estimated Total Average Daily Traffic (ADT) generated \_\_\_\_; Estimated maximum peak hour traffic generated (if known) and its timing \_\_\_\_\_. For each affected road indicate the ADT and the directional distribution of

traffic with and without the project. Provide an estimate of the impact on traffic congestion on the affected roads and describe any traffic improvements which will be necessary.

N/A.

- 23. Vehicle-related air emissions** Provide an estimate of the effect of the project's traffic generation on air quality, including carbon monoxide levels. Discuss the effect of traffic improvements or mitigation measures on air quality impacts. (If the project involves 500 or more parking spaces, consult "EAW Guidelines" about whether a detailed air quality analysis is needed.)

Since the project will not affect traffic flow, there should not be any significant decrease in air quality.

- 24. Stationary source air emissions** Will the project involve any stationary sources of air emissions (such as boilers or exhaust stacks)? ☐ Yes ☒ No If yes, describe the sources, quantities, and composition of the emissions; the proposed air pollution control devices; the quantities and composition of the emissions after treatment; and the effects on air quality.

- 25.** Will the project generate dust, odors, or noise during construction and/or operation? If yes, describe the sources, characteristics, duration, and quantities or intensity, and any proposed measures to mitigate adverse impacts. Also identify the locations of sensitive receptors in the vicinity and estimate the impacts on these receptors.

Typical noise from a pontoon boat is expected during the project. This impact will be temporary and generally confined to the project site.

- 26.** Are any of the following resources on or in proximity to the site:

	<u>Yes</u>	<u>No</u>
a. archeological, historical or architectural resources?	—	<u>X</u>
b. prime or unique farmlands?	—	<u>X</u>
c. designated parks, recreation areas, or trails?	—	<u>X</u>
d. scenic views or visits?	—	<u>X</u>
e. other unique resources?	—	<u>X</u>

If any items are answered Yes, describe the resource and identify any impacts on the resource due to the project. Describe any measures to be taken to minimize or avoid adverse impacts.

- 27.** Will the project create adverse visual impacts? (Examples include: glare from intense lights; lights visible in wilderness areas; and large visible plumes from cooling towers or exhaust stacks.)  
☐ Yes ☒ No. If yes, explain.

- 28. Compatibility with plans** Is the project subject to an adopted local comprehensive land use plan or any other applicable land use, water or resource management plan of an local, regional, state, or federal agency? ☐ Yes ☒ No If yes, identify the applicable plan(s), discuss the compatibility of the project with the provisions of the plan(s), and explain how any conflicts between the project and the plan(s) will be resolved. If no, explain.

**29. Impact on Infrastructure and Public Services** *Will new or expanded utilities, roads, other infrastructure, or public services be required to serve the project? [ ] Yes [X] No. If yes, describe the new or additional infrastructure/services needed. (Any infrastructure that is a "connected action" with respect to the project must be assessed in the EAW; see "EAW Guidelines" for details.)*

**30. Related Developments; Cumulative Impacts**

- a. *Are future stages of this development planned or likely? [ ] Yes [X] No  
If yes, briefly describe future stages, their timing, and plans for environmental review.*
- b. *Is this project a subsequent stage of an earlier project? [ ] Yes [X] No  
If yes, briefly describe the past development, its timing, and any past environmental review.*
- c. *Is other development anticipated on adjacent lands or outlots? [ ] Yes [X] No*
- d. *If a, b, or c were marked Yes, discuss any cumulative environmental impacts resulting from this project and the other development.*

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

No other potential environmental impacts have been identified at this time.

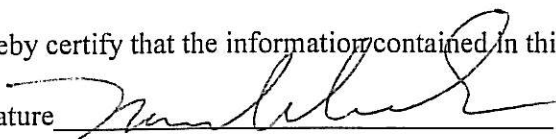
**32. Summary of Issues** *(This section need not be completed if the EAW is being done for EIS scoping: instead, address relevant issues in the draft Scoping Decision document which must accompany the EAW.) List any impacts and issues identified above that may require further investigation before the project is commenced. Discuss any alternatives or mitigative measures that may have been or may be considered for these impacts and issues, including those that have been or may be ordered as permit conditions.*

The need for further investigation of previously discussed items is not anticipated at this time. The project will comply with all provisions required under the pending MDNR permit.

**Certifications by the RGU** (all 3 certifications must be signed for EQB acceptance of the EAW for publication of notice in the EQB Monitor)

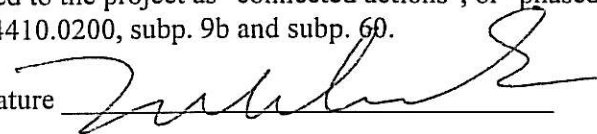
- A. I hereby certify that the information contained in this document is accurate to the best of my knowledge.

Signature



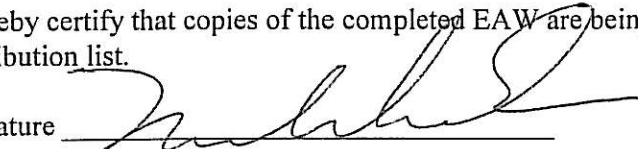
- B. I hereby certify that the project described in this EAW is the complete project and there are no other projects, project stages or project components, other than those described in this document, which are related to the project as "connected actions", or "phased actions," as defined, respectively, at Minn. Rules, pts. 4410.0200, subp. 9b and subp. 60.

Signature



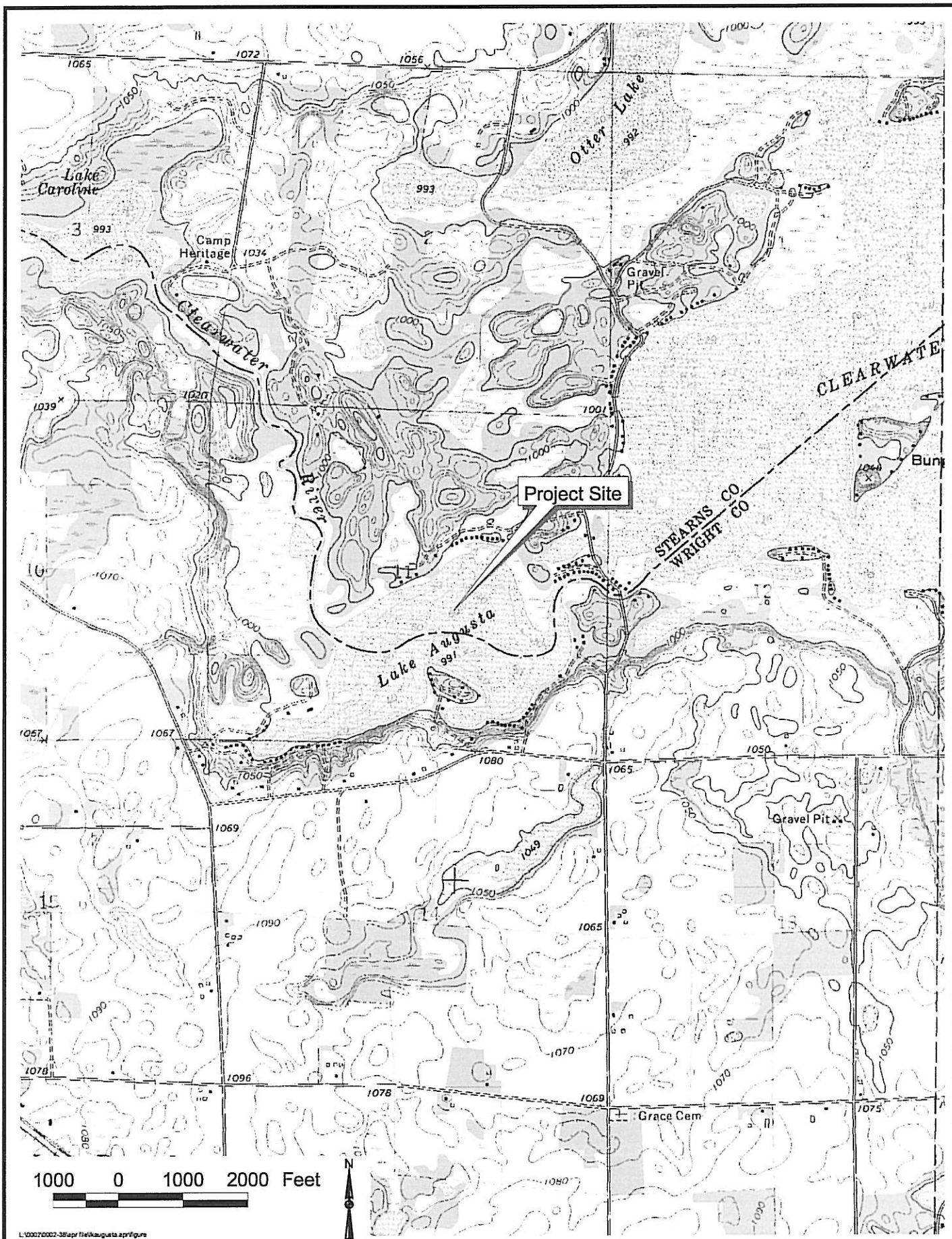
- C. I hereby certify that copies of the completed EAW are being sent to all points on the official EQB EAW distribution list.

Signature



Title of signer Date 9-8-01





CLEARWATER RIVER WATERSHED DISTRICT

Lake Augusta EWM Project

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**Wenck**

Wenck Associates, Inc. 1800 Pioneer Creek Center  
Environmental Engineers Maple Plain, MN 55359-0249

SEP 2001



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## **Appendix C**

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### **List of PID's and Names of Benefited Properties**

0-05530000	STEARNS	JOHN R SR & KRISTA M MATTHEES
0905530001	STEARNS	ROLAND J & MARLENE C MEYER
C 05531000	STEARNS	MICHAEL J BORRELL
C 05532000	STEARNS	MICHAEL J BORRELL
0905535000	STEARNS	JOHN W SMITH JR
C 05536000	STEARNS	JACK & JUDY KRAHL
C 05874004	STEARNS	CLIFFORD C & DOT M ANDERSON
0905874006	STEARNS	RICHARD M & SHEILA M ANDERSON
C 05874008	STEARNS	JOAN L ANDERSEN
05874010	STEARNS	WILLIS L & PATRICIA ARMITAGE
0905877000	STEARNS	GREGORY P & MARY K ALBERG
C 05878000	STEARNS	RAYMOND L & CAROL R CRUMP
05879000	STEARNS	CURTIS A BOYES
0905880000	STEARNS	ALOYSIUS & MARLYN PUFAHL
0905881000	STEARNS	ALOYSIUS & MARLYN PUFAHL
05882000	STEARNS	ROGER A & PHYLLIS D ECKHOFF
0905883000	STEARNS	LARRY S & MARY E HARTMANN
0905884000	STEARNS	DANIEL D BARTH
05885000	STEARNS	THOMAS G & THERESA K BRANDT
0905886000	STEARNS	TODD L & CONNIE J BISHIR
0905887000	STEARNS	LANCE R HARTMANN
05888000	STEARNS	ELMARS M KIPLOKS
0905889000	STEARNS	LEROY J & BERTHA E DROEGE
0905890000	STEARNS	SYLVESTER J SNICKER
0905891000	STEARNS	WILLIAM R & LENORA D CLARK
0905892000	STEARNS	WM DYE ETAL
0905893000	STEARNS	JOSEPHINE WILLIS
0905894000	STEARNS	HARVEY G WINSTON
0905895000	STEARNS	SILAS & MARY K SHARP
0905896000	STEARNS	EDWARD L & LURENA C MOORE
0905898000	STEARNS	LLOYD C & BETTY L MOLLENKOPF
0905899000	STEARNS	IDA A HAWKINS
0905900000	STEARNS	RICHARD H ROBINSON
217000113400	WRIGHT	SPRINGDALE ASC C/O LEMERE
217000113401	WRIGHT	RONALD G MILLER
217000114100	WRIGHT	ROBERT L & PATRICIA A YOUNG
217000114300	WRIGHT	LEROY & HAZEL JOHNSON
217000114301	WRIGHT	CARY W ARMSTRONG
217000114302	WRIGHT	PAUL L ERICKSON % LEONARD ERICKSON
217000114303	WRIGHT	BURANDT, DENNIS E & MARGARET A
217000114400	WRIGHT	EVANGELINE E SCHATZ
217000142200	WRIGHT	DARRELL M & LINDA K LANGAGER
217015000010	WRIGHT	THOMAS & B A STEVENSON
217015000020	WRIGHT	THOMAS & B A STEVENSON
217015000030	WRIGHT	STENSON, CHARLES A & VICKI L
217015000040	WRIGHT	ALICE G VON ENDE
217015000050	WRIGHT	JOHN M AND ROSE MARIE CHELL
217015000060	WRIGHT	JOHN M AND ROSE MARIE CHELL
217015000070	WRIGHT	RICHARD WESTERDAHL
217015000080	WRIGHT	GEORGE F AND G M BRINKHAUS
217015000091	WRIGHT	CURTIS H & JAE-DEE LINDBLOM
217015000092	WRIGHT	CURTIS H & JAE-DEE LINDBLOM

217015000110	WRIGHT	JESS AND CLARICE QUINER
217015000120	WRIGHT	JESS AND CLARICE QUINER
217015000130	WRIGHT	STANLEY L & MARJORIE LEUTHNER
217015000140	WRIGHT	STANLEY L & MARJORIE LEUTHNER
217015000150	WRIGHT	STANLEY L & MARJORIE LEUTHNER
217015000160	WRIGHT	STANLEY L & MARJORIE LEUTHNER
217015000170	WRIGHT	STANLEY L & MARJORIE LEUTHNER
217015000180	WRIGHT	STANLEY L & MARJORIE LEUTHNER
217015000190	WRIGHT	CLAYTON & SHIRLEY DISKERUD LIVING TRUST
217015000200	WRIGHT	CLAYTON & SHIRLEY DISKERUD LIVING TRUST
217015000210	WRIGHT	CHASE, RACHELLE D & M FISHER
217015000220	WRIGHT	CLARENCE J GROSS
217015000230	WRIGHT	BURANDT, DENNIS E & MARGARET A
217040000020	WRIGHT	EVANGELINE E SCHATZ
217040001010	WRIGHT	MICHAEL & MARGARET A MEDLEY
217040001020	WRIGHT	MICHAEL & MARGARET A MEDLEY
217040001030	WRIGHT	WILLIAM F & RENEE J BAKER
217040001040	WRIGHT	WILLIAM F & RENEE J BAKER
217040001050	WRIGHT	ROBERT C & LINDA A OEHLERS
217040001051	WRIGHT	THOMAS C & PATRICIA M MEDLEY
217040001060	WRIGHT	ROBERT C & LINDA A OEHLERS
217040001070	WRIGHT	THEODORE M & BEVERLY L GLAVIN
217040001080	WRIGHT	WILLIAM & LEONA KONIARSKI
217040001090	WRIGHT	ALCUIN S & ADELLE ROERING
217040001100	WRIGHT	STEVEN & BARBARA VOSS
217051000010	WRIGHT	CHARLES R & KARLA M BENNETT
217051000020	WRIGHT	WILLIAM J BARRON
217051000030	WRIGHT	ROBERT J & PATRICIA N AGUILAR
217051000040	WRIGHT	ROGER K & CAROL KULLANDER
217051000050	WRIGHT	ROGER & SANDI TOFT
217051000060	WRIGHT	ARTHUR E & JOYCE DE WOLF
217051000070	WRIGHT	DE WOLF, ARTHUR E & JOYCE
217051000080	WRIGHT	LLOYD & MARY SCOTTING
217051000090	WRIGHT	STEVEN K & NANCY M ZIMMER
217051000100	WRIGHT	CHARLES M & NATALIE S JOHNSON
217051000110	WRIGHT	BILL L BERWYN
217051000120	WRIGHT	BRADLEY C & TERESA B HAEG
217052001010	WRIGHT	JOHN & SUSAN STENSING
217052001040	WRIGHT	MARK E KAMPA
217052001050	WRIGHT	PAUL D & BONNITA J KELLER
217052001060	WRIGHT	LYLE BREN
217052001080	WRIGHT	WARREN S & DEBORAH WELLER
217052001090	WRIGHT	HALEK, JAMES M & KATHLEEN R
217052002010	WRIGHT	RONALD K TROCKE
217052002020	WRIGHT	RONALD K & HELEN TROCKE
217052002030	WRIGHT	SHRINERS HOSPITAL FOR CRP CHILD
217052003010	WRIGHT	THOMAS E & RICHARD C KING
217052003020	WRIGHT	THOMAS E & RICHARD C KING
217052004010	WRIGHT	THOMAS E & RICHARD C KING
217053002010	WRIGHT	GLADYS V RADERMACHER
217053002020	WRIGHT	KLING, BERNICE & DAVID A KLING
217053002030	WRIGHT	RICHARD L & RITA A JAMES

217053002040	WRIGHT	JAMES R & MAJORIE G ZIPF
217053002050	WRIGHT	ILYNNE R CORNELL
217053002060	WRIGHT	HARVEY O & JOYCE L DAHL
217053002070	WRIGHT	ROGER W & D J RAUSCHENDORFER
217053002080	WRIGHT	LAUREN D & LUCILLE VANDERVORT
217053002082	WRIGHT	ROGER W & D J RAUSCHENDORFER
217053002083	WRIGHT	DAVID A KLING
217053002090	WRIGHT	THOMAS J SCHULTZ
217054001010	WRIGHT	NILSON, TODD R
217054002010	WRIGHT	MIESSEN, RICHARD J & TERESA A
217054002030	WRIGHT	LORNE J & HEIDI E OLSON
217054002040	WRIGHT	BRIAN L & JANICE K TEMPLIN
217054002060	WRIGHT	ELMER & MYRA E TEMPLIN
217054002090	WRIGHT	HAROLD BROOKS III
217054002100	WRIGHT	JON T & MICHAEL J FASHANT
217054002110	WRIGHT	VERNON P ECK
217054002130	WRIGHT	RUTH GUTZMANN
217054002140	WRIGHT	JUDITH M FERRELL
217054002160	WRIGHT	ELEANORE O BOVY
217054002170	WRIGHT	ELEANORE O BOVY
217054002190	WRIGHT	GARY E & YVONNE C FEHN