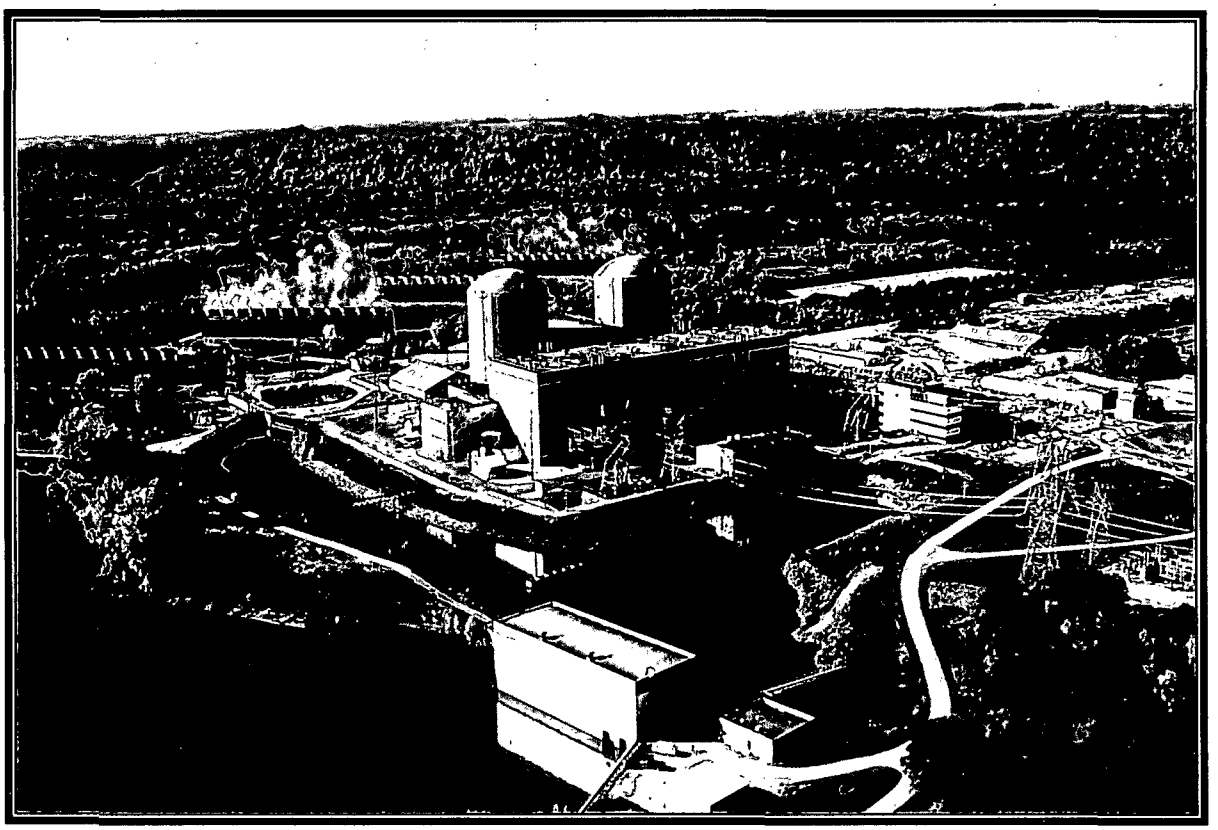
Xcel Energy

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

LICENSE RENEWAL ENVIRONMENTAL REPORT
ADDITIONAL INFORMATION



Documents Requested During NRC Environmental Review

Groundwater Resources

Binder 1 of 1

Prairie Island Nuclear Generating Plant
NRC Document Request List

Item Number	Document
Ali Travers	
38	2005 Tritium Report
39	2006 Tritium Report
40	2007 Tritium Report
41	Water Appropriation Reports (2001-2007)--Hydro Binder
42	MDNR Permit 865114
43	MDNR Permit 785153
44	MDNR Permit 690172
45	MDNR Permit 965042
46	MDNR Permit 690171
47	ER Ref: Bergland 2006
49	ER Ref, MDNR 2005a
50	ER Ref Binder #9, TtNUS 2006b
53	Intake and Recycle Modification Model Study
55	MNDNR's Pool 3 Drawdown Plan
56	MRBDC 2001- "State of the MN River"

Internal Correspondence

NMC Committed to Nuclear Excellence

Date **January 11, 2006**

From **Pete Wildenborg** Location **PINGP**

To **Jon Anderson** Location **PINGP**

Subject **Tritium Report - 2005 TRITIUM GROUND WATER SAMPLING RESULTS**

The offsite and onsite tritium sample results for 2005 and previous years (see Attachment 1) show that tritium levels in the groundwater near the Prairie Island (PI) plant fluctuate at levels less than 5% of the Environmental Protection Agency's drinking water standard of 20,000 pCi/L.

PI conducts the special tritium sampling program to monitor groundwater tritium levels near the plant in response to unexpectedly high sample results found in 1989 (see Attachment 3). High tritium levels have not been detected since PI took actions to reduce potential tritium intrusion into the groundwater. The program sample results are documented in this annual internal report and are available for review by the Nuclear Regulatory Commission and the Minnesota Department of Health.

Conclusions:

- The 2005 sample results show a temporary increase in the tritium level at test well P-10. The level is within the fluctuation noted in this well over the past 10 years. The other sample results show no major increases or decreases in activity from previous years' results.
- No definitive trends can be gleaned from the data though the general trend is stable or decreasing concentrations.
- All sample results onsite and offsite continue to be well below the Environmental Protection Agency's tritium drinking water standard of 20,000 pCi/L.

If you have any questions concerning the information presented in this report, please call Pete Wildenborg at 651 388-1121, Ext. 4379.

Created and Reviewed by: Pete Wildenborg Date: 1/11/06

Attachment 1: TRITIUM SAMPLING RESULTS
Attachment 2: ONSITE TRITIUM SAMPLING WELL LOCATIONS
Attachment 3: BRIEF TRITIUM SAMPLING HISTORY

cc w/attachments:

P Huffman, PINGP T Palmisano, PINGP
J LeClair, PINGP B Kuhl, PINGP

TRITIUM SAMPLING RESULTS
(pCi/L)

SAMPLE LOCATION	May-98	Aug-98	Oct-98	May/Jun 99	Oct-99	Jun-00	Jul/Aug 01	Oct-01	Jan-02	Apr-02	Jul/Aug 02	Oct-02	Jan-03	Apr-03	Jul/Aug 03	Oct-03	Jan-04	Apr-04	Jul-04	Oct-04	Jan-05	Apr/May 05	Aug-05	Nov-05
SUTER'S DEEP WELL, P-24D	<19		<19	77	74	42	80			182	170	160	128	109	118	67	102	66	52	94	66	67	44	60
BIRCH LK SEEPAGE 2, P-32		99	51		128																			
BIRCH LK SEEPAGE 1, P-31		125	99		115																			
NAUER WELL, P-27	42		35	64																				
ALLYN (PERKINS) WELL, P-28	102		112	138	77																			
D CHILDS WELL, P-29	234		118	147	144																			
PITC WELL, P-26	48		61	102	93		42				67				42				33				37	
PI COMMUNITY WELL, P-8	<19		<19	<19	<19	<19	<19								<19				33				<19	
ROHL WELL (CONTROL), P-25	74		51	77	74																			
Lock & Dam #3 Well	<19		<19	<19	<19	<19	<19				<19				<19				<19				<19	
P-2	118		163	93	67	54	77				42				67				47				44	
P-3	115		144	102	61	67	106				74				128				115				84	
P-4	157		115	234	170	176	102				74				90				74				108	
P-5	128		90	96	61	74	61				51				61				80				92	
P-6	93		80	48	118	58	80				48				29				36				64	
P-7	224		131	90	138	64	58				138				67				71				144	
P-10	314		470	77	<19	54	1014	576	150	125	800	912	320	38	150	115	122	74	936	1388	456	1346	1687	627
P-11	90		109	93	70	<19	48				29				26				<19				43	
PZ-1	<19		42	38	<19	<19	29				22				48				<19				56	
PZ-2	32		22	58	29	<19	42				<19				45				39				52	
PZ-4	102		80	83	93	32	93				54				83				87				76	
PZ-5	22		51	22	<19	26	26				45				48				38				34	
PZ-7	80		115	83	67	77	38				54				64				51				20	
PZ-8	35		54	61	35	42	64				22				32				22				48	
MW-4	22		38	19	61	<19	35				26				51				22				35	
MW-5	<19		32	<19	<19	35	80				42				<19				26				<19	
MW-6	32		45	45	38	<19	61				32				48				<19				<19	
ENVIRON LAB WELL, P-30	<19		<19	<19	<19	29	<19				<19				<19				27				<19	
STA HOUSE								45			32				70				21				49	
MISSISSIPPI RIVER UPSTREAM	58		64	35	29	51	77				29				35				45				27	
RECIRCULATION/INTAKE CANAL	<19		26	29	35	<19	32				26				38				55				48	
COOLING WATER CANAL	<19		<19	32	61	29	<19				54				35				35				25	
DISCHARGE CANAL (end)	22		51	26	22	42	19				<19				<19				23				51	
DISCHARGE CANAL (midstream)	35		54	42	64	29	26				<19				<19				65				28	
CT PUMP WELL	70		83	195	157	80	118				45				77				24				54	
PLANT WELL #2	<19		26	22	54	67	54				45				<19				39				45	
PAUL FLYNN RESIDENT (CONTROL)	<19		22	38	22	54	<19	35	<19	26														
HUPPERT FARM P-41 (CONTROL)						45	54		32	35	38	26	54	54	35	<19	48							
RON HANSON RESIDENT											<19	<19	<19	<19	<19	<19	29	<19	22	42	<19	<19	<19	<19
PETERSON FARM P-43 (CONTROL)																		17	20	53	49	24	21	19

NOTES:

(1) Samples are collected by PINGP personnel and analyzed by the University of Waterloo Environmental Isotope Laboratory.

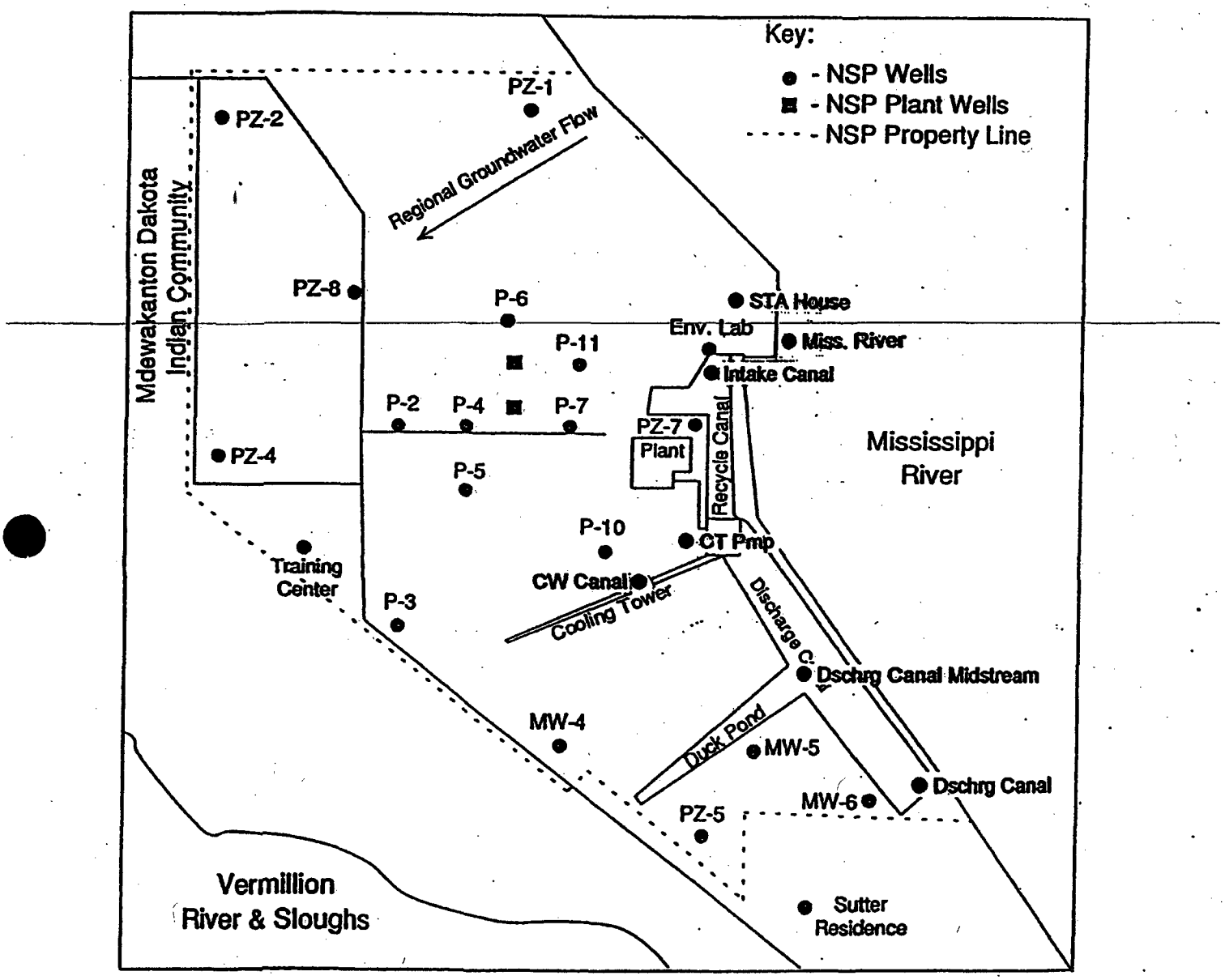
(2) All values above are reported as picoCuries per Liter (pCi/L).

(3) In cases where the activity is found to be below the lower limit of detection, it is reported as < x.

(4) Rohl & Huppert wells control location is about 13 miles north of the plant. Flynn well control location is about 5.4 miles northwest of the plant.

(5) Ron Hanson well control location is about 5 miles northeast of the plant.

ONSITE TRITIUM SAMPLING WELL LOCATIONS



ATTACHMENT 2 – Page 1 of 1

BRIEF TRITIUM SAMPLING HISTORY

History of Tritium in PINGP ground water:

1989 A special tritium sampling program was established following the detection of tritium in a residence well water sample south of the PINGP (Suter residence) during 1989. The purpose of the sampling was to assess the impact of any tritium possibly leaching into the environment (ground water) from the PINGP discharge canal.

1991 A plant modification added a liquid discharge pipe submerged in the discharge canal causing all liquid discharges from the plant to be released at the end of the discharge canal passing through the sluice gates into the Mississippi River. This modification prevents the lingering radioactive water from lingering prolonged times in the discharge canal and leaching into the ground water. The Suter well experienced lower tritium levels after this modification.

Tritium sampling of P-10 resulted in higher than expected levels of tritium (1360 pCi/L).

1992 A plant modification replaced the liquid discharge piping from the Aux. Bldg. to the discharge canal piping because there was suspicion that the old piping may be leaking based on sample well P-10 having higher levels of tritium. The piping is a double walled pipe that may be leak monitored for leakage.

1999 Tritium sampling of P-10 resulted in the trend reaching <19 pCi/L.

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XCEL ENERGY CORPORATION

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

ANNUAL REPORT
To the
UNITED STATES NUCLEAR REGULATORY COMMISSION

Radiation Environmental Monitoring Program

January 1 to December 31, 2006

Docket No.	50-282	License No.	DPR-42
	50-306		DPR-60
ISFSI			
Docket No.	72-10		SNM-2506

Prepared under Contract by

ENVIRONMENTAL, Inc.
MIDWEST LABORATORY

Project No. 8010

Approved: _____

Bronia Grob, M.S.
Laboratory Manager

APPENDIX E

Special Well and

Surface Water Samples

1.0 INTRODUCTION

This appendix to the Radiation Environmental Monitoring Program Annual Report to the United States Regulatory Commission summarizes and interprets results of the special well and surface water samples taken at the Prairie Island Nuclear Generating Plant, Red Wing, Minnesota, during the period January - December, 2006. This supplemental special sampling program was established in December of 1989 when higher than expected levels of tritium were detected in a nearby residence well sample.

Tabulations of the special sampling program individual analyses made during the year are included in this appendix. A summary table of tritium analyses is also included in this appendix.

2.0 SUMMARY

This special sampling program was established following the detection of tritium in a residence well water sample south of the PINGP during 1989. This program is described and the results for 2006 are summarized and discussed.

Program findings for 2006 detect low levels of tritium in nearby residence wells and ground water surface samples at or near the expected natural background levels with the exception of sample well P-10. The 2006 sample results ranged from <19 pCi/L to 107 pCi/L and sample well P-10 ranged from 432 pCi/L to 3773 pCi/L. All tritium results are far below the Environmental Protection Agency's drinking water standard of 20,000 pCi/L and present no harm to any members of the public.

3.0 Special Tritium Sampling Program

3.1 Program Design and Data Interpretation

The purpose of this sampling program is to assess the impact of any tritium leaching into the environment (ground water system) from the PINGP. For this purpose, special water samples are collected and analyzed for tritium content.

3.2 Program Description

The sampling and analysis schedule for the special water sampling program is summarized in Table 4.1 and briefly reviewed below. Table 4.2 defines the additional sample locations and codes for the special water sampling program.

Special well and surface water samples were collected quarterly at one location, quarterly at three locations up to September, 2006 when the frequency was changed to monthly for these three locations, and annually at thirty-one locations. The Peterson (P-43) and Hanson farm wells are used as control locations for these special samples.

To detect low levels of tritium at or below natural background levels, analyses of the samples have been contracted to a laboratory (University of Waterloo Laboratories) capable of detecting tritium concentrations down to 19 pCi/L. Waterloo Laboratories report tritium analyses results in Tritium Units (1 TU = 3.2 pCi/L). The tritium results in this report are indicated in pCi/L.

3.3 Program Execution

The special water sampling was executed as described in the preceding section.

3.4 Program Modifications

The only change to the program in 2006 was the change in sampling frequency from quarterly to monthly for sample well P-10 and the two control wells.

3.5 Results and Discussion

Results obtained show tritium in well water and ground water samples at or near expected natural background levels, except for the P-10 sample well. Table 4.4 provides the complete data table of results for each period and sampling location.

The tritium level annual averages have shown a downward trend since the special sampling begun in 1989.

Results and Discussion (continued)

Except for sample well P-10, the 2006 sample results are within the range of expected background tritium levels in shallow ground water and surface water, due to tritium concentrations measured in precipitation. Sampling points in North America have shown tritium concentrations in precipitation ranging from 5 pCi/L to 157 pCi/L (Environmental Isotope Data No. 10; World Survey of Isotope Concentration in Precipitation (1988-1991)).

The higher level results at Suter and Birch Lake in 1989 were possibly due to seepage from the PINGP discharge canal water into the ground water. This is thought to occur due to the elevation difference between the Vermillion River and the discharge canal. The Suter residence is located between the discharge canal and Birch Lake, which connects to the Vermillion River. The PINGP discharge canal piping was lengthened during 1991, so that liquid discharges from the plant are released near the end of the discharge canal, diffused and discharged to the Mississippi River. In 1992, the underground liquid discharge pipe from the plant to the discharge canal piping was replaced with a double walled leak detectable piping system. This year's sample results continue to indicate that these modifications have eliminated the suspected radioactive effluent flow into the local ground water.

Table E-4.1 Sample collection and analysis program for special well and surface water samples, Prairie Island Nuclear Generating Plant, 2006.

Medium	No.	Location codes and type[a]	Collection type and frequency[b]	Analysis type[c]
Well water	26	P-8, REMP P-6, PIIC-02, PIIC-22, PIIC-26, P-2, P-3, P-4, P-5, P-6, P-7, P-11, PZ-1, PZ-2, PZ-3, PZ-4, PZ-5, PZ-7, PZ-8, MW-4, MW-5, MW-6, P-26, P-30, SW-2, SW-3, P-9	G/A	H-3
Well water	1	P-24D	G/Q	H-3
Well water	3	P-43(C), SW-1(C), P-10	G/M[d]	H-3
Surface water	5	S-1, S-2, S-3, S-4, S-5	G/A	H-3

[a] Location codes are defined in table D-4.2. Control Station are indicated by (C). All other stations are indicators.

[b] Collection type is codes as follows: G/ = grab. Collection frequency is coded as follows: M = monthly; Q = quarterly; A = annually.

[c] Analysis type is coded as follows: H-3 = tritium.

[d] The frequency changed for these three locations from quarterly to monthly starting in September, 2006.

Table E-4.2. Sampling locations for special well and surface water samples, PINGP, 2006.

Code	Collection site	Sample type [a]	Distance and direction from reactor
P-8	PI Community well	WW	1.0 mi. @ 321°/WNW
REMP P-6	Lock & Dam #3 well	WW	1.6 mi. @ 129°/SE
PIIC-02	2077 Other Day Road	WW	1.4 mi. @ 315°/NW
PIIC-22	1773 Buffalo Slough Rd	WW	1 mi. @ 315°/NW
PIIC-26	1771 Buffalo Slough Rd	WW	1 mi. @ 315°/NW
P-24D	Suter residence	WW	0.6 mi. @ 158°/SSE
P-43	Peterson Farm (Control)	WW	13.9 mi. @ 355°/N
SW-1	Hanson Farm (Control)	WW	2.2 mi. @ 315°/NW
P-2	Sample well	WW	See map
P-3	Sample well	WW	See map
P-4	Sample well	WW	See map
P-5	Sample well	WW	See map
P-6	Sample well	WW	See map
P-7	Sample well	WW	See map
P-10	Sample well	WW	See map
P-11	Sample well	WW	See map
PZ-1	Sample well	WW	See map
PZ-2	Sample well	WW	See map
PZ-4	Sample well	WW	See map
PZ-5	Sample well	WW	See map
PZ-7	Sample well	WW	See map
PZ-8	Sample well	WW	See map
MW-4	Sample well	WW	See map
MW-5	Sample well	WW	See map
MW-6	Sample well	WW	See map
P-26	PITC well	WW	0.4 mi. @ 258°/WSW
P-30	Environ lab well	WW	0.2 mi. @ 32°/NNE
SW-2	STA House	WW	See map
SW-3	Cooling Tower pump	WW	See map
P-9	Plant well # 2	WW	0.3 mi. @ 306°/NW
S-1	Mississippi River upstream	SW	See map
S-2	Recirculation/Intake canal	SW	See map
S-3	Cooling water canal	SW	See map
S-4	Discharge Canal (end)	SW	See map
S-5	Discharge Canal (midway)	SW	See map

[a] Sample codes: WW = Well water; SW = Surface Water.

Figure E-1. Onsite Tritium Sampling Well Locations

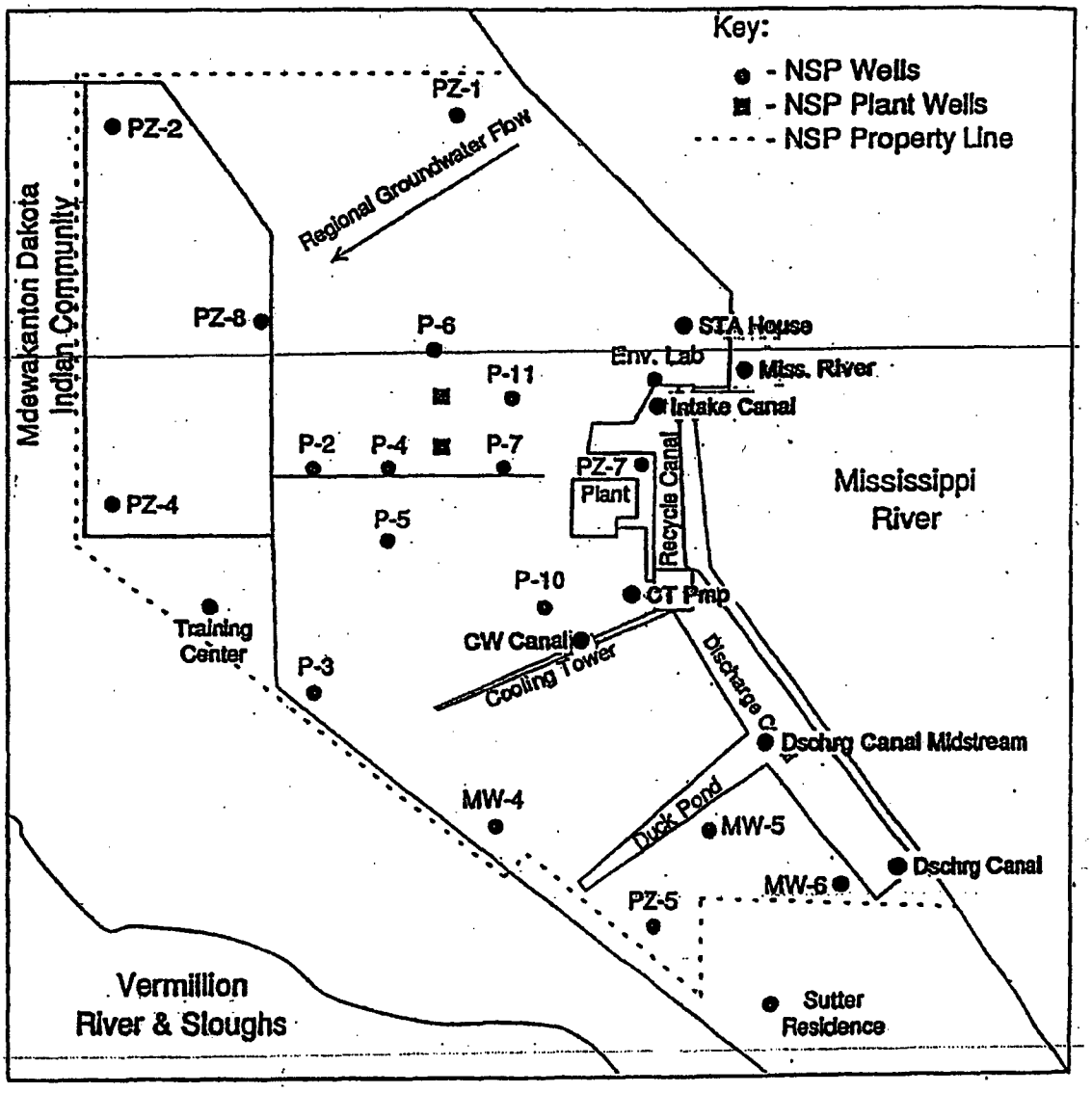

Table E-4.3 Radiation Environmental Monitoring Program Summary: Special well and surface water samples.

Name of Facility Prairie Island Nuclear Power Station — Docket No. 50-282, 50-306
Location of Facility Goodhue, Minnesota (County, State) — Reporting Period January - December 2006

Sample Type (Units)	Type and Number of Analyses[a]		LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Semi-Annual Mean: Location[d]	Location with Highest Semi-Annual Mean: Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range	Number Non-Routine Results[e]
Offsite Well Water (pCi/L)	H-3	23	19	60 (7/9) (26-102)	PIIC-22	102 (1/1) (102)	32 (3/14) (22-45)	0
Onsite Well Water (pCi/L)	H-3	42	19	625 (22/28) (33-3773)	P-10	1837 (7/7) (432-3773)	32 (3/14) (22-45)	7
Onsite Surface Water (pCi/L)	H-3	19	19	36 (2/5) (30-42)	Recirc/intake canal	42 (1/1) (42)	32 (3/14) (22-45)	0

a H-3 = tritium

b LLD = Nominal lower limit of detection based on 4.66 sigma error for background sample. Value shown is lowest for the period.

c Mean and range are based on detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (F).

d Locations are specified: (1) by name, and code (Table 2) and (2) by distance, direction and sector relative to reactor site.

e Non-routine results are those which exceed ten times the control station value.

Table E-4.4 Radiological Environmental Monitoring Program , Complete Data Table, 2006.

	SAMPLE DATES	JAN 2006	APR 2006	JUL 2006	SEP 2006	OCT 2006	NOV 2006	DEC 2006
CODE	SAMPLE LOCATIONS	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
	OFFSITE WELLS							
P-8	PI Community well			<19				
REMP P-6	Lock & Dam #3 well			<19				
PIIC-02	2077 Other Day Road			43				
PIIC-22	1773 Buffalo Slough Rd			102				
PIIC-26	1771 Buffalo Slough Rd			76				
P-24D	Suter residence	84	26	48		44		
P-43	Peterson Farm (C)	29	45	<19	<19	<19	<19	<19
SW-1	Hanson Farm (C)	<19	<19	<19	<19	<19	22	<19
	ONSITE WELLS							
P-2	Sample well			107				
P-3	Sample well			59				
P-4	Sample well			93				
P-5	Sample well			70				
P-6	Sample well			35				
P-7	Sample well			46				
P-10	Sample well	931	432	2876	3773	2588	1568	692
P-11	Sample well			53				
PZ-1	Sample well			<19				
PZ-2	Sample well			<19				
PZ-4	Sample well			73				
PZ-5	Sample well			35				

Table E-4.4 Radiological Environmental Monitoring Program , Complete Data Table, 2006, (continued).

	SAMPLE DATES	JAN 2006	APR 2006	JUL 2006	SEP 2006	OCT 2006	NOV 2006	DEC 2006
CODE	SAMPLE LOCATIONS	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
	ONSITE WELLS							
PZ-7	Sample well			50				
PZ-8	Sample well			<19				
MW-4	Sample well			<19				
MW-5	Sample well			87				
MW-6	Sample well			33				
P-26	PITC well			65				
P-30	Environ lab well			<19				
SW-2	STA House			44				
SW-3	Cooling Tower pump			42				
P-9	Plant well # 2			<19				
	ONSITE SURFACE WATER							
S-1	Mississippi River upstream			<19				
S-2	Recirculation/Intake canal			42				
S-3	Cooling water canal			<19				
S-4	Discharge Canal (end)			<19				
S-5	Discharge Canal (midway)			30				

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XCEL ENERGY CORPORATION

PRAIRIE ISLAND NUCLEAR GENERATING PLANT

ANNUAL REPORT
To the
UNITED STATES NUCLEAR REGULATORY COMMISSION

Radiation Environmental Monitoring Program

January 1 to December 31, 2007

Docket No.	50-282	License No.	DPR-42
	50-306		DPR-60
ISFSI			
Docket No.	72-10		SNM-2506

Prepared under Contract by

ENVIRONMENTAL, Inc.
MIDWEST LABORATORY

Project No. 8010

Approved: _____

Bronia Grob, M.S.
Laboratory Manager

APPENDIX E

Special Well and

Surface Water Samples

1.0 INTRODUCTION

This appendix to the Radiation Environmental Monitoring Program Annual Report to the United States Nuclear Regulatory Commission summarizes and interprets results of the special well and surface water samples taken at the Prairie Island Nuclear Generating Plant, Red Wing, Minnesota, during the period January - December, 2007. This supplemental special sampling program was established in December of 1989 when higher than expected levels of tritium were detected in a nearby residence well sample.

Tabulations of the special sampling program individual analyses made during the year are included in this appendix. A summary table of tritium analyses is also included in this appendix.

2.0 SUMMARY

This special sampling program was established following the detection of tritium in a residence well water sample south of the PINGP during 1989. This program is described and the results for 2007 are summarized and discussed.

Program findings for 2007 detect low levels of tritium in nearby residence wells and ground water surface samples at or near the expected natural background levels with the exception of sample well P-10. The 2007 sample results (except for P-10) ranged from <19 pCi/L to 513 pCi/L and sample well P-10 ranged from 390 pCi/L to 2258 pCi/L. All tritium results are far below the Environmental Protection Agency's drinking water standard of 20,000 pCi/L and present no harm to any members of the public.

3.0 Special Tritium Sampling Program

3.1 Program Design and Data Interpretation

The purpose of this sampling program is to assess the impact of any tritium leaching into the environment (ground water system) from the PINGP. For this purpose, special water samples are collected and analyzed for tritium content.

3.2 Program Description

The sampling and analysis schedule for the special water sampling program is summarized in Table 4.1 and briefly reviewed below. Table 4.2 defines the additional sample locations and codes for the special water sampling program.

Special well and surface water samples were collected quarterly at one location and monthly at five locations, and annually at thirty-two locations. The Peterson (P-43) and Hanson (SW-1) farm wells are used as control locations for these special samples.

To detect low levels of tritium at or below natural background levels, analyses of the samples have been contracted to a laboratory (University of Waterloo Laboratories) capable of detecting tritium concentrations down to 19 pCi/L. Waterloo Laboratories report tritium analyses results in Tritium Units (1 TU = 3.2 pCi/L). The tritium results in this report are indicated in pCi/L.

3.3 Program Execution

The special water sampling was executed as described in the preceding section.

3.4 Program Modifications

Changes to the program in 2007 include:

- the addition of monitoring wells MW-7 and MW-8 in the vicinity of well P-10 to assess the higher levels previously noted in P-10
- the addition of the New Administration Building well
- the addition of the Plant Screenhouse well
- the addition of a stormwater runoff sample
- sampling was not performed at station P-3 because it was inaccessible
- sampling was not performed at the STA house (SW-2) because it was dry

3.5 Results and Discussion

Results obtained show tritium in well water and ground water samples at or near expected natural background levels except the P-10, MW-7, amd MW-8 sample wells. Table 4.4 provides the complete data table of results for each period and sampling location.

Results and Discussion (continued)

The tritium level annual averages have shown a downward trend since the special sampling begun in 1989.

Except for sample wells P-10, MW-7, and MW-8, the 2007 sample results are within the range of expected background tritium levels in shallow ground water and surface water due to tritium concentrations measured in precipitation. Sampling points in North America have shown tritium concentrations in precipitation ranging from 5 pCi/L to 157 pCi/L (Environmental Isotope Data No. 10; World Survey of Isotope Concentration in Precipitation (1988-1991)).

The higher level results at the Suter residence and Birch Lake in 1989 were possibly due to seepage from the PINGP discharge canal water into the ground water. This is thought to occur due to the elevation difference between the Vermillion River and the discharge canal. The Suter residence is located between the discharge canal and Birch Lake, which connects to the Vermillion River. The PINGP discharge canal piping was lengthened during 1991, so that liquid discharges from the plant are released near the end of the discharge canal, diffused and discharged to the Mississippi River. In 1992, the underground liquid discharge pipe from the plant to the discharge canal piping was replaced with a double walled leak detectable piping system. This year's sample results continue to indicate that these modifications have eliminated the suspected radioactive effluent flow into the local ground water.

The elevated tritium levels in sample wells P-10, MW-7, and MW-8 in 2007 may be due to prior leakage from the PINGP liquid radwaste discharge pipe or discharge of turbine building sump water into the landlocked area. The liquid radwaste discharge pipe was replaced in 1992 and the discharge to the landlocked area has been minimized by administrative controls.

Table E-4.1. Sample collection and analysis program, Special well and surface water samples, Prairie Island Nuclear Generating Plant, 2007.

Medium	No.	Location codes and type [a]	Collection type and frequency [b]	Analysis type [c]
Well water, Annual	28	P-8, REMP P-6, PIIC-02, PIIC-22, PIIC-26, P-2, P-3, P-4, P-5, P-6, P-7, P-11, PZ-1, PZ-2, PZ-3, PZ-4, PZ-5, PZ-7, PZ-8, MW-4, MW-5, MW-6, P-9, P-26, P-30, SW-2, SW-3, SW-4, SW-5	G/A	H-3
Well water, quarterly	1	P-24D	G/Q	H-3
Well water, monthly	5	P-43(C), SW-1(C), MW-7, MW-8, P-10	G/M [d]	H-3
Surface water	6	S-1, S-2, S-3, S-4, S-5, S-6	G/A	H-3

[a] Location codes are defined in table D-4.2. Control Stations are indicated by (C). All other stations are indicators. Stations MW-7, MW-8, SW-4, SW-5, and S-6 were added in 2007.

[b] Collection type is codes as follows: G/ = grab. Collection frequency is coded as follows: M = monthly; Q = quarterly; A = annually.

[c] Analysis type is coded as follows: H-3 = tritium.

[d] Wells MW-7 and MW-8 were added in September 2007 and monthly sampling was begun in October 2007.

Table E-4.2. Sampling locations for special well and surface water samples, Prairie Island Nuclear Generating Plant, 2007.

Code	Collection site	Type of sample [b]	Distance and Direction from reactor
P-8	PI Community well	WW	1.0 mi. @ 321°/WNW
REMP P-6	Lock & Dam #3 well	WW	1.6 mi. @ 129°/SE
PIIC-02	2077 Other Day Road	WW	1.4 mi. @ 315°/NW
PIIC-22	1773 Buffalo Slough Rd	WW	1 mi. @ 315°/NW
PIIC-26	1771 Buffalo Slough Rd	WW	1 mi. @ 315°/NW
P-24D	Suter residence	WW	0.6 mi. @ 158°/SSE
P-43	Peterson Farm (Control)	WW	13.9 mi. @ 355°/N
SW-1	Hanson Farm (Control)	WW	2.2 mi. @ 315°/NW
P-2	Sample well	WW	See map
P-3	Sample well	WW	See map
P-4	Sample well	WW	See map
P-5	Sample well	WW	See map
P-6	Sample well	WW	See map
P-7	Sample well	WW	See map
P-10	Sample well	WW	See map
P-11	Sample well	WW	See map
PZ-1	Sample well	WW	See map
PZ-2	Sample well	WW	See map
PZ-4	Sample well	WW	See map
PZ-5	Sample well	WW	See map
PZ-7	Sample well	WW	See map
PZ-8	Sample well	WW	See map
MW-4	Sample well	WW	See map
MW-5	Sample well	WW	See map
MW-6	Sample well	WW	See map
MW-7	Sample well	WW	See map
MW-8	Sample well	WW	See map
P-26	PITC well	WW	0.4 mi. @ 258°/WSW
P-30	Environ lab well	WW	0.2 mi. @ 32°/NNE
SW-2	STA House	WW	See map
SW-3	Cooling Tower pump	WW	See map
SW-4	New Admin Bldg	WW	0.05 mi. @ 315°/NW
SW-5	Plant Screenhouse well	WW	0.05 mi. @ 0°/N
P-9	Plant well # 2	WW	0.3 mi. @ 306°/NW
S-1	Mississippi River upstream	SW	See map
S-2	Recirculation/Intake canal	SW	See map
S-3	Cooling water canal	SW	See map
S-4	Discharge Canal (end)	SW	See map
S-5	Discharge Canal (midway)	SW	See map
S-6	Stormwater Runoff	SW	0.05 mi. @ 0°/N

[a] Sample codes: WW = Well water; SW = Surface Water.

Table E-4.3 Radiation Environmental Monitoring Program Summary: Special well and surface water samples.

Name of Facility Prairie Island Nuclear Power Station Docket No. 50-282, 50-306

Location of Facility Goodhue, Minnesota (County, State) Reporting Period January - December 2007

Sample Type (Units)	Type and Number of Analyses[a]		LLD[b]	Indicator Locations Mean (F)[c] Range[c]	Location with Highest Annual Mean: Location[d]	Location with Highest Annual Mean: Mean (F)[c] Range[c]	Control Locations Mean (F)[c] Range[c]	Number Non-Routine Results[e]
Offsite Well Water (pCi/L)	H-3	36	19	45 (9/12) (23-65)	PIIC-22	65 (1/1) (65)	29 (3/24) (25-32)	0
Onsite Well Water (pCi/L)	H-3	63	19	367 (36/39) (24-2258)	P-10	908 (12/12) (390-2258)	29 (3/24) (25-32)	15
Onsite Surface Water (pCi/L)	H-3	30	19	94 (5/6) (35-285)	S-6	285 (1/1) (285)	29 (3/24) (25-32)	0

a H-3 = tritium

b LLD = Nominal lower limit of detection based on 4.66 sigma error for background sample. Value shown is lowest for the period.

c Mean and range are based on detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses (F).

d Locations are specified: (1) by name, and code (Table 2) and (2) by distance, direction and sector relative to reactor site.

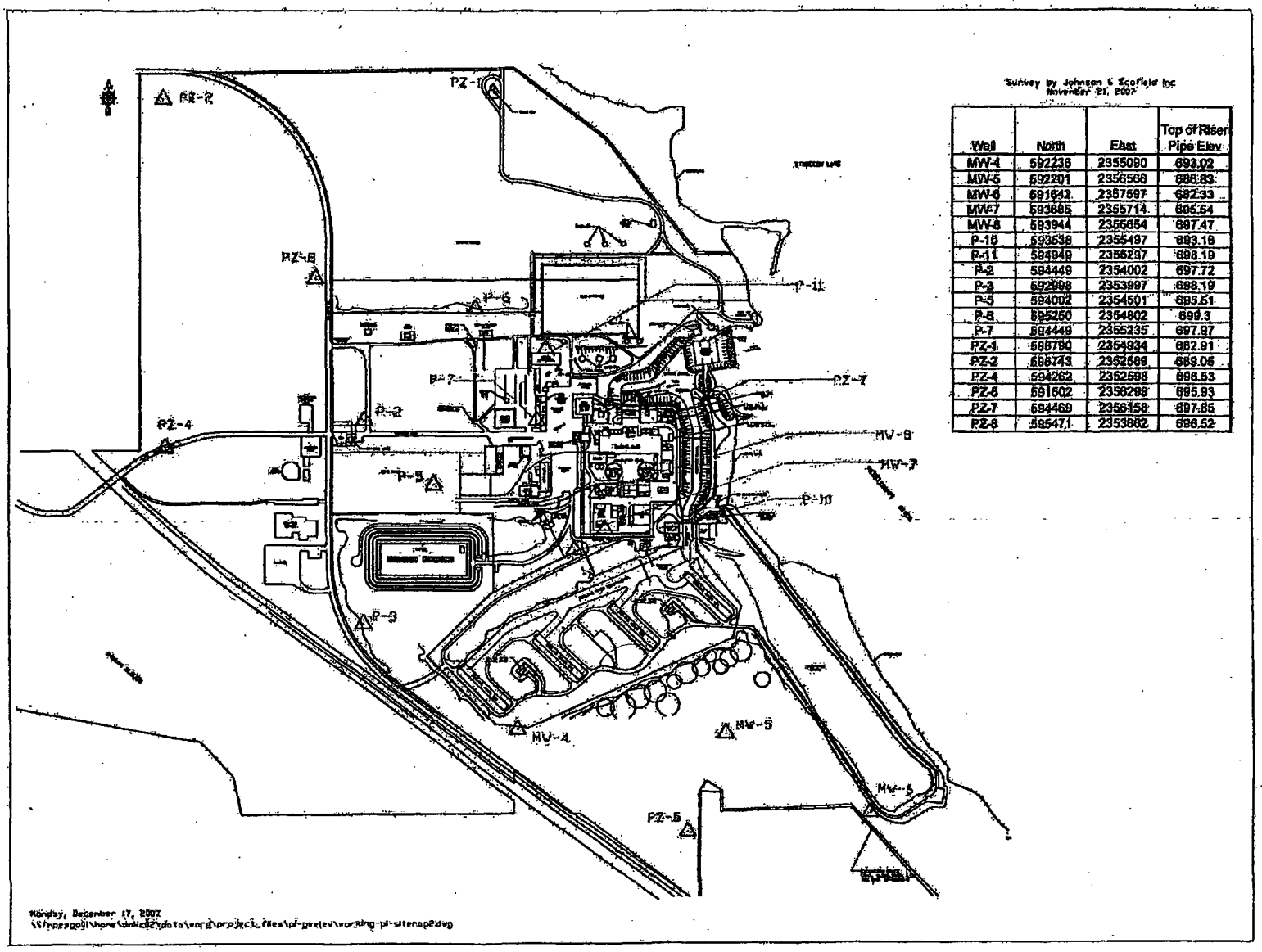
e Non-routine results are those which exceed ten times the control station value.

Table E-4.4 Radiological Environmental Monitoring Program , Complete Data Table, 2007, continued.

	SAMPLE DATES	JAN 2007	FEB 2007	MAR 2007	APR 2007	MAY 2007	JUN 2007	JUL 2007	AUG 2007	SEP 2007	OCT 2007	NOV 2007	DEC 2007
CODE	SAMPLE LOCATIONS	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
	ONSITE WELLS												
P-2	Sample well							66					
P-4	Sample well							< 19					
P-5	Sample well							109					
P-6	Sample well							45					
P-7	Sample well							95					
P-10	Sample well	1289	390	453	967	835	784	482	544	486	1724	2258	678
P-11	Sample well							65					
PZ-1	Sample well							< 19					
PZ-2	Sample well							71					
PZ-4	Sample well							40					
PZ-5	Sample well							47					
PZ-7	Sample well							52					
PZ-8	Sample well							54					
MW-4	Sample well							46					
MW-5	Sample well							35					
MW-6	Sample well							44					
MW-7	Sample well									341		73	54
MW-8	Sample well									43		325	513
P-26	PITC well							31					
P-30	Env. lab well							< 19					
SW-3	Cooling Tower pump							37					
P-9	Plant well # 2							24					
SW-4	New Admin							65					
SW-5	Pln Scmhs							32					

Table E-4.4 Radiological Environmental Monitoring Program , Complete Data Table, 2007, continued.

	SAMPLE DATES	JAN 2007	FEB 2007	MAR 2007	APR 2007	MAY 2007	JUN 2007	JUL 2007	AUG 2007	SEP 2007	OCT 2007	NOV 2007	DEC 2007
CODE	SAMPLE LOCATIONS	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L	pCi/L
	ONSITE SURFACE WATER												
S-1	Mississippi River upstream							57					
S-2	Recirculation/Intake canal							56					
S-3	Cooling water canal							< 19					
S-4	Discharge Canal (end)							36					
S-5	Discharge Canal (midway)							35					
S-6	Stormwater runoff									285			
	OFFSITE WELLS												
P-8	PI Community Well							< 19					
REMP P-6	Lock & Dam #3 well							< 19					
PIIC-02	2077 Other Day Rd.							< 19					
PIIC-22	1773 Buffalo Slough Rd.							65					
PIIC-26	1771 Buffalo Slough Rd.							62					
P-24D	Suter residence	63	47		35	25		23	46		36		
P-43	Peterson Farm (Control)	< 19	25	< 19	< 19	< 19	< 19	< 19	29	< 19	< 19	< 19	< 19
SW-1	Hanson Farm (Control)	32	< 19	< 19	< 19	< 19	< 19	< 19	< 19	< 19	< 19	< 19	< 19



Survey by Johnson & Scofield Inc
November 21, 2007

Well	North	East	Top of Riser Pipe Elev
MW-4	592236	2355080	693.02
MW-5	592201	2356566	696.83
MW-6	591642	2357597	682.33
MW-7	593665	2355714	695.54
MW-8	593944	2355654	697.47
P-10	593538	2355497	693.18
P-11	594949	2356297	698.19
P-2	594449	2354002	697.72
P-3	592998	2353997	698.19
P-5	594002	2354501	695.51
P-6	595250	2354802	699.3
P-7	594449	2355235	697.97
PZ-1	596790	2354934	682.91
PZ-2	596743	2352599	689.05
PZ-4	594262	2352598	698.53
PZ-6	591602	2356299	695.93
PZ-7	594469	2356158	697.85
PZ-8	595471	2353882	698.52

Monday, December 17, 2007
\\fnpzgo01\home\dnicol2\data\work\projects_files\pf-geolev\working-pl-siteop2.dwg

STD

690171
2001

2001 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **690171** Installation: **121**

Use: **COMMERCIAL & INSTITUTIONAL**
Source Type: **GROUND WATER**

Twp: **113** Rng: **15** Sec: **5** Qtr:

NEW NSP-PRAIRIE ISLAND
JAMES BODENSTEINER
E R A D
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 300 (Pump Design Flow)

January	981,700	July	299,200
February	3,225,500	August	1,778,300
March	126,300	September	31,200
April	1,416,000	October	1,999,500
May	445,400	November	2,788,000
June	3,473,800	December	409,400
		TOTAL	16,994,300

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 1/28/02 PHONE (651) 388-1121

STD

690171
2001

2001 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **690171** Installation: **122**

Use: **COMMERCIAL & INSTITUTIONAL**
Source Type: **GROUND WATER**

Twp: **113** Rng: **15** Sec: **5** Qtr:

NEW NSP-PRAIRIE ISLAND
JAMES BODENSTEINER
E R A D
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 300 (Pump Design Flow)

January	2,335,700	July	2,485,800
February	438,000	August	1,396,300
March	1,674,300	September	2,660,100
April	179,100	October	612,100
May	1,967,000	November	174,600
June	716,600	December	1,732,460
		TOTAL	16,372,060

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 1/28/02 PHONE (651) 388-1121

STD

690171
2001

2001 DNR - FEE CALCULATION WORKSHEET

NEW NSP-PRAIRIE ISLAND, MINNEAPOLIS, MN 55401-1927
Permit: **690171** Use: **213** Permit Volume (MG/Y): **315.0** Installations: **2** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $50.00. 33,346,360 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest thousandth, and enter here: 33.346 million gallons
(Example: 128,243,400 rounds to 128.243 million gallons)

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $50.00
50 to 100 million gallons	$1.00
100 to 150 million gallons	$1.50
150 to 200 million gallons	$2.00
200 to 250 million gallons	$2.50
250 to 300 million gallons	$3.00
300 to 350 million gallons	$3.50
350 to 400 million gallons	$4.00
Over 400 million gallons	$4.50

4. Multiply Line 2 by Line 3. $ _____
For Example:
128.243 million gallons
x 1.50 dollars per million gallons
$192.36 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$35,000
entity with 4 to 5 permits	$50,000

Classification	Maximum Fee
entity with more than 5 permits	$175,000
city of the first class	$175,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $50.00 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table below, enter the maximum fee from the table on this line.
   c) If the amount on line 4 is less than the maximum fee and greater than the minimum fee, enter the amount from line 4. $ 175,000

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ ~~175,000~~

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2001** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 175,000
Make checks payable to "DNR Waters", and mail to:
DNR Waters
500 Lafayette Road Box 48
St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours Do not write below this line.

STD

690172
2001

2001 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **690172** Installation: **1**

Use: **NUCLEAR POWER PLANT**
Source Type: **STREAM/RIVER**
Source Name: **MISSISSIPPI**

Twp: **113** Rng: **15** Sec: **5** Qtr:

NEW NSP-PRAIRIE ISLAND
JAMES BODENSTEINER
E R A D
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 577,240 (Highest monthly average)

January	12,238,000,000	July	23,428,000,000
February	7,820,000,000	August	16,957,000,000
March	15,367,000,000	September	22,335,000,000
April	16,134,000,000	October	25,768,000,000
May	7,050,000,000	November	24,086,000,000
June	12,726,000,000	December	21,706,000,000

TOTAL 205,615,000,000

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
____ 2. Flow Rate Meter with: ____ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
✓ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 1/28/02 PHONE (651) 388-1121

Gary M Fiske

STD

690172
2001

2001 DNR - FEE CALCULATION WORKSHEET

NEW NSP-PRAIRIE ISLAND, MINNEAPOLIS, MN 55401-1927
Permit: **690172** Use: **226** Permit Volume (MG/Y): **215000.0** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $50.00. 205,615,000,000 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest thousandth, and enter here: 205,615.000 million gallons
(Example: 128,243,400 rounds to 128.243 million gallons)

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $50.00
50 to 100 million gallons	$1.00
100 to 150 million gallons	$1.50
150 to 200 million gallons	$2.00
200 to 250 million gallons	$2.50
250 to 300 million gallons	$3.00
300 to 350 million gallons	$3.50
350 to 400 million gallons	$4.00
Over 400 million gallons	$4.50

4. Multiply Line 2 by Line 3. $ _____
For Example:
128.243 million gallons
x 1.50 dollars per million gallons
$192.36 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$35,000
entity with 4 to 5 permits	$50,000

Classification	Maximum Fee
entity with more than 5 permits	$175,000
city of the first class	$175,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $50.00 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table below, enter the maximum fee from the table on this line.
   c) If the amount on line 4 is less than the maximum fee and greater than the minimum fee, enter the amount from line 4. $ 175,000

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ ~~175,000~~

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2001** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 175,000
Make checks payable to "DNR Waters", and mail to:
DNR Waters
500 Lafayette Road Box 48
St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours Do not write below this line.

STD

785153
2001

2001 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **785153** Installation: **1**

Use: **STEAM POWER - OTHER THAN COOLING**
Source Type: **GROUND WATER**

Twp: **113** Rng: **15** Sec: **4** Qtr: **CBB**

NEW NSP-PRAIRIE ISLAND
JAMES BODENSTEINER
E R A D
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 40 (Pump Design Flow)

January	0	July	777,420
February	0	August	714,360
March	0	September	604,770
April	62,020	October	264,370
May	508,320	November	64,050
June	667,880	December	0
		TOTAL	3,663,190

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 1/28/12 PHONE (651) 388-1121

STD

865114
2001

2001 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **865114** Installation: **1**

Use: **POWER GENERATION**
Source Type: **GROUND WATER**

Twp: **113** Rng: **15** Sec: **5** Qtr: **ADD**

NEW NSP
JAMES BODENSTEINER
E R A D
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 50 (Pump Design Flow)

January	502,200	July	821,600
February	532,900	August	748,500
March	569,500	September	599,100
April	549,600	October	638,500
May	658,000	November	508,700
June	659,200	December	479,900

TOTAL 7,267,700

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 1/8/02 PHONE (651) 388-1121

STD

865114
2001

2001 DNR - FEE CALCULATION WORKSHEET

NEW NSP, MINNEAPOLIS, MN 55401-1927
Permit: **865114** Use: **229** Permit Volume (MG/Y): **20.0** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $50.00. 7,267,700 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest thousandth, and enter here: 7.268 million gallons
(Example: 128,243,400 rounds to 128.243 million gallons)

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $50.00
50 to 100 million gallons	$1.00
100 to 150 million gallons	$1.50
150 to 200 million gallons	$2.00
200 to 250 million gallons	$2.50
250 to 300 million gallons	$3.00
300 to 350 million gallons	$3.50
350 to 400 million gallons	$4.00
Over 400 million gallons	$4.50

4. Multiply Line 2 by Line 3. $ _____
For Example: 128.243 million gallons
x 1.50 dollars per million gallons
$192.36 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$35,000
entity with 4 to 5 permits	$50,000

Classification	Maximum Fee
entity with more than 5 permits	$175,000
city of the first class	$175,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $50.00 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table below, enter the maximum fee from the table on this line.
   c) If the amount on line 4 is less than the maximum fee and greater than the minimum fee, enter the amount from line 4. $ 175,000

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ ~~175,000~~

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2001** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 175,000
Make checks payable to "DNR Waters", and mail to: **DNR Waters**
500 Lafayette Road Box 48
St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours Do not write below this line.

STD

785153
2001

2001 DNR - FEE CALCULATION WORKSHEET

NEW NSP-PRAIRIE ISLAND, MINNEAPOLIS, MN 55401-1927
Permit: **785153** Use: **225** Permit Volume (MG/Y): **26.3** Installations: **1** County: **25**

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $50.00. 3,663,190 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest thousandth, and enter here: 3.663 million gallons
(Example: 128,243,400 rounds to 128.243 million gallons)

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $50.00
50 to 100 million gallons	$1.00
100 to 150 million gallons	$1.50
150 to 200 million gallons	$2.00
200 to 250 million gallons	$2.50
250 to 300 million gallons	$3.00
300 to 350 million gallons	$3.50
350 to 400 million gallons	$4.00
Over 400 million gallons	$4.50

4. Multiply Line 2 by Line 3. $ _____
For Example:
128.243 million gallons
x 1.50 dollars per million gallons
$192.36 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$35,000
entity with 4 to 5 permits	$50,000

Classification	Maximum Fee
entity with more than 5 permits	$175,000
city of the first class	$175,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $50.00 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table below, enter the maximum fee from the table on this line.
   c) If the amount on line 4 is less than the maximum fee and greater than the minimum fee, enter the amount from line 4. $ 175,000

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ ~~175,000~~

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2001** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 175,000
Make checks payable to "DNR Waters", and mail to:
DNR Waters
500 Lafayette Road Box 48
St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours

Do not write below this line.

STD

965042
2001

2001 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **965042** Installation: **1**

Use: **COMMERCIAL & INSTITUTIONAL**
Source Type: **GROUND WATER**

Twp: **113** Rng: **15** Sec: **5** Qtr: **CAA**

NEW NSP-PRAIRIE ISLAND
JAMES BODENSTEINER
E R A D
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 80 (Pump Design Flow)

January	36,800	July	617,900
February	33,000	August	724,800
March	34,500	September	688,300
April	29,600	October	155,600
May	138,400	November	38,800
June	437,400	December	36,600
		TOTAL	2,971,700

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 1/28/02 PHONE (651) 388-1121

STD

965042
2001

2001 DNR - FEE CALCULATION WORKSHEET

NEW NSP-PRAIRIE ISLAND, MINNEAPOLIS, MN 55401-1927
Permit: **965042** Use: **213** Permit Volume (MG/Y): **4.7** Installations: **1** County: **25**

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $50.00. 2,971,700 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest thousandth, and enter here: 2.972 million gallons
(Example: 128,243,400 rounds to 128.243 million gallons)

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $50.00
50 to 100 million gallons	$1.00
100 to 150 million gallons	$1.50
150 to 200 million gallons	$2.00
200 to 250 million gallons	$2.50
250 to 300 million gallons	$3.00
300 to 350 million gallons	$3.50
350 to 400 million gallons	$4.00
Over 400 million gallons	$4.50

4. Multiply Line 2 by Line 3. $ _____
For Example:
128.243 million gallons
x 1.50 dollars per million gallons
$192.36 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$35,000
entity with 4 to 5 permits	$50,000

Classification	Maximum Fee
entity with more than 5 permits	$175,000
city of the first class	$175,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $50.00 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table below, enter the maximum fee from the table on this line.
   c) If the amount on line 4 is less than the maximum fee and greater than the minimum fee, enter the amount from line 4. $ 175,000

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ ~~175,000~~

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2001** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 175,000
Make checks payable to "DNR Waters", and mail to:
DNR Waters
500 Lafayette Road Box 48
St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours

Do not write below this line.

Water Use Report Directions

Enclosed are the 2002 Water Use Report forms for your
Minnesota Department of Natural Resources water appropriation permit(s)

*Please complete these forms with all requested information and return with the appropriate fee by **February 15, 2003**, even if no water was used during 2002.*

A condition of each water appropriation permit is the monthly measurement and yearly reporting of water use with an approved measuring device to an accuracy of 10%. A monthly water use reporting sheet, Installation Worksheet, is printed for each installation (well/pump station) for each permit. Fill in the monthly water used in units of whole gallons for each installation. A flow meter, flow rate meter, or timing device is required to measure water use. Only pre-approved alternate methods can be substituted.

The Fee Calculation Worksheet is used to determine your processing fee based on the amount of water used. Add the individual installation totals to make a grand total for each permit. Use the fee rate table to determine the fee and follow the instructions to calculate the amount due.

The Permit Data Verification Form is used to check compliance with permitted water use volume and to request amendment, transfer, or termination of permits. Note the fee exemptions for amendments and transfers.

Please note the following items related to water use reporting:

To calculate monthly water use from:
A Flow Meter: Subtract the beginning of the month readings from end of the month readings. Report water use in gallons for each month. If meter readings are in cubic-feet, multiply by **7.4805** to convert to gallons.

A Timing Device: Multiply the hours pumped times the pump rate (in gallons per minute) times 60 (minutes). [Example: 150 hrs x 800 gpm x 60 min/hr = 7,200,000 gallons].

For irrigators:
Gallons of water per acre = Total Annual Gallons ÷ number of irrigated acres
Inches of water per acre = Gallons of water per acre ÷ 27,154

Calculate the "inches per acre" for each crop type by installation. The total of each individual crop acres times the inches per acre, when converted into gallons, should equal the total water use for each installation.

Pay by check or money order, do not send cash.
Make your check or money order payable to **DNR Waters.**
All money received goes to the State of Minnesota General Fund. Return all completed forms with your payment to the address on the Fee Calculation Worksheet. You may pay for all permits using one check.

Questions? Please call **(651) 296-0435** (answered during the day, voice mail at night) or send email to **wateruse@dnr.state.mn.us.** Please include your name, permit number, telephone number, and specific questions when leaving a message. We will return your call or send you the information/forms requested.

Before mailing your pumping reports:

- Check to see if all information is filled out correctly
- Check all calculations on each form
- Enclose a check or money order payable to **DNR Waters**

Non-Reporting: Permits for which reports and fees are not received by **February 15, 2003**, are subject to **termination.** All active permits require reports and fees. Permittees that do not submit the required fee will be referred to the Minnesota Department of Revenue for collection.

To suggest changes that you feel would make water use reporting easier or more effective, please write your comments on a separate sheet of paper. We welcome your ideas.

Turn over for general information on Minnesota water use!

STD

690171
2002

2002 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: 690171 Installation: 121

Use: COMMERCIAL & INSTITUTIONAL
Source Type: GROUND WATER

Twp: 113 Rng: 15 Sec: 5 Qtr:

NEW NSP-PRAIRIE ISLAND
JAMES BODENSTEINER
E R A D
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: 612-330-6625

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of gallons withdrawn in each month. Pumping Rate (gpm): 300 gpm Pump design flow

January	2,010,200	July	2,338,700
February	3,557,500	August	40,100
March	2,247,500	September	2,283,800
April	21,300	October	256,200
May	1,968,300	November	2,174,500
June	1,301,100	December	759,100
		TOTAL	18,958,300

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE Jeanne M Sobrias DATE 1/28/03 PHONE (651) 388-1121

1/28/03

STD

690171
2002

2002 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: 690171 Installation: 122

Use: COMMERCIAL & INSTITUTIONAL
Source Type: GROUND WATER

Twp: 113 Rng: 15 Sec: 5 Qtr:

NEW NSP-PRAIRIE ISLAND
JAMES BODENSTEINER
E R A D
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: 612-330-6625

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of gallons withdrawn in each month. Pumping Rate (gpm): 300 gpm (design flow pump)

January	23,300	July	381,300
February	600,000	August	1,982,800
March	311,000	September	435,900
April	2,105,300	October	1,468,200
May	497,000	November	1,201,900
June	673,800	December	1,928,800
		TOTAL	11,609,300

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE Jeanne M Solvias DATE 1/28/03 PHONE (651) 388 1121

1/28/03

STD

690171
2002

2002 DNR - FEE CALCULATION WORKSHEET

NEW NSP-PRAIRIE ISLAND, MINNEAPOLIS, MN 55401-1927
Permit: **690171** Use: **213** Permit Volume (MG/Y): **315.0** Installations: **2** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $50.00. 30,567,600 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest thousandth, and enter here: 30.568 million gallons
(Example: 128,243,400 rounds to 128.243 million gallons)

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $50.00
50 to 100 million gallons	$1.00
100 to 150 million gallons	$1.50
150 to 200 million gallons	$2.00
200 to 250 million gallons	$2.50
250 to 300 million gallons	$3.00
300 to 350 million gallons	$3.50
350 to 400 million gallons	$4.00
Over 400 million gallons	$4.50

4. Multiply Line 2 by Line 3. $ _____
For Example:
128.243 million gallons
x 1.50 dollars per million gallons
$192.36 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$35,000
entity with 4 to 5 permits	$50,000

Classification	Maximum Fee
entity with more than 5 permits	$175,000
city of the first class	$175,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $50.00 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table below, enter the maximum fee from the table on this line.
   c) If the amount on line 4 is less than the maximum fee and greater than the minimum fee, enter the amount from line 4. $ _____

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2002** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
Make checks payable to "DNR Waters", and mail to:
DNR Waters
500 Lafayette Road Box 48
St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours

STD

690171
2002

2002 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet _____ million gallons

If this number is greater than **315.0** million gallons an amendment is required along with an after-the-fact fee of $150.00. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75.00 (or $150.00 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the information below.

   a. New owner name:_____ Phone: ( )_____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items will be required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75.00 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, indicate why it is no longer needed.
   Note: the 2002 water use report and fee are still required.

Minnesota Rules 6115.0120 Fee Exemptions

1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

SIGNATURE_____ DATE_____ PHONE ( )_____

STD

690172
2002

2002 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: 690172 Installation: 1

Use: NUCLEAR POWER PLANT
Source Type: STREAM/RIVER
Source Name: MISSISSIPPI

Twp: 113 Rng: 15 Sec: 5 Qtr: ADD

NEW NSP DBA XCEL ENERGY
PRAIRIE ISLAND
JAMES BODENSTEINER - E R A D
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:
NSP dba Xcel Energy
James Bodensteiner - Env. Services

Phone: 612-388-1121

A. If no water was withdrawn this year indicate the reason.
____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of gallons withdrawn in each month. Pumping Rate (gpm): 568,280 (Highest monthly Ave)

January	20,037,000,000.	July	25,368,000,000
February	8,911,000,000	August	24,643,000,000
March	18,046,000,000	September	23,086,000,000
April	11,986,000,000	October	22,051,000,000
May	6,952,000,000	November	13,610,000,000
June	12,464,000,000	December	13,255,000,000
		TOTAL	200,408,000,000

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
____ 2. Flow Rate Meter with: ____ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
X 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE Jeanne M. Zobiak DATE ~~1/26~~ 27 JMT /03 PHONE (651) 388-1121

1/28/03

STD

690172
2002

2002 DNR - FEE CALCULATION WORKSHEET

NEW NSP DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **690172** Use: **226** Permit Volume (MG/Y): **235000.0** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $50.00. 200,408,000,000 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest thousandth, and enter here: 200,408,000 million gallons
(Example: 128,243,400 rounds to 128.243 million gallons)

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $50.00
50 to 100 million gallons	$1.00
100 to 150 million gallons	$1.50
150 to 200 million gallons	$2.00
200 to 250 million gallons	$2.50
250 to 300 million gallons	$3.00
300 to 350 million gallons	$3.50
350 to 400 million gallons	$4.00
Over 400 million gallons	$4.50

4. Multiply Line 2 by Line 3. $ _____
For Example:
128.243 million gallons
x 1.50 dollars per million gallons
$192.36 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$35,000
entity with 4 to 5 permits	$50,000

Classification	Maximum Fee
entity with more than 5 permits	$175,000
city of the first class	$175,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $50.00 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table below, enter the maximum fee from the table on this line.
   c) If the amount on line 4 is less than the maximum fee and greater than the minimum fee, enter the amount from line 4. $ _____

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2002** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
Make checks payable to "DNR Waters", and mail to:
DNR Waters
500 Lafayette Road Box 48
St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours

STD

690172
2002

2002 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet _____ million gallons

If this number is greater than **235000.0** million gallons an amendment is required along with an after-the-fact fee of $150.00. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75.00 (or $150.00 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the information below.

   a. New owner name:_____ Phone: (____)_____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items will be required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75.00 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, indicate why it is no longer needed.
   Note: the 2002 water use report and fee are still required.

Minnesota Rules 6115.0120 Fee Exemptions
1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

SIGNATURE_____ DATE _____ PHONE (____)_____

STD

785153
2002

2002 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: 785153 Installation: 1

Use: STEAM POWER - OTHER THAN COOLING
Source Type: GROUND WATER

Twp: 113 Rng: 15 Sec: 4 Qtr: CBB

NEW NSP-PRAIRIE ISLAND
JAMES BODENSTEINER
ERAD
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: 612-330-6625

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of gallons withdrawn in each month. Pumping Rate (gpm): 40 gpm Pump Design Flow

January	0	July	514,140
February	0	August	515,390
March	0	September	572,090
April	428,620	October	338,140
May	529,680	November	161,450
June	491,290	December	0

TOTAL 3,550,800

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE Jeanne M Dobias DATE 1/27/03 PHONE (651) 388-1121

1/28/03

STD

785153
2002

2002 DNR - FEE CALCULATION WORKSHEET

NEW NSP-PRAIRIE ISLAND, MINNEAPOLIS, MN 55401-1927
Permit: **785153** Use: **225** Permit Volume (MG/Y): **26.3** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $50.00. 3,550,800 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest thousandth, and enter here: 3.551 million gallons
(Example: 128,243,400 rounds to 128.243 million gallons)

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $50.00
50 to 100 million gallons	$1.00
100 to 150 million gallons	$1.50
150 to 200 million gallons	$2.00
200 to 250 million gallons	$2.50
250 to 300 million gallons	$3.00
300 to 350 million gallons	$3.50
350 to 400 million gallons	$4.00
Over 400 million gallons	$4.50

4. Multiply Line 2 by Line 3. $ _____
For Example:
128.243 million gallons
x 1.50 dollars per million gallons
$192.36 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$35,000
entity with 4 to 5 permits	$50,000

Classification	Maximum Fee
entity with more than 5 permits	$175,000
city of the first class	$175,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $50.00 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table below, enter the maximum fee from the table on this line.
   c) If the amount on line 4 is less than the maximum fee and greater than the minimum fee, enter the amount from line 4. $ _____

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2002** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
Make checks payable to "DNR Waters", and mail to:
DNR Waters
500 Lafayette Road Box 48
St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours

STD

785153
2002

2002 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet _____ million gallons

If this number is greater than **26.3** million gallons an amendment is required along with an after-the-fact fee of $150.00. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75.00 (or $150.00 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the information below.

   a. New owner name:_____ Phone: (____) _____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items will be required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75.00 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, indicate why it is no longer needed.
   Note: the 2002 water use report and fee are still required.

_____

_____

Minnesota Rules 6115.0120 Fee Exemptions
1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

SIGNATURE_____ DATE_____ PHONE (____) _____

STD

865114
2002

2002 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **865114** Installation: **1**

Use: **POWER GENERATION**
Source Type: **GROUND WATER**

Twp: **113** Rng: **15** Sec: **5** Qtr: **ADD**

NEW NSP
JAMES BODENSTEINER
E R A D
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 50 gpm (Pump Design Flow)

January	444,300	July	320,400
February	306,100	August	350,400
March	274,300	September	500,300
April	290,900	October	340,800
May	316,500	November	367,900
June	305,400	December	463,400
		TOTAL	4,280,700

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE Jeanne M Zolnas DATE 1/27 JMT PHONE (651) 388 1121

1/28/03

STD

865114
2002

2002 DNR - FEE CALCULATION WORKSHEET

NEW NSP, MINNEAPOLIS, MN 55401-1927
Permit: **865114** Use: **229** Permit Volume (MG/Y): **20.0** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $50.00. 4,280,700 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest thousandth, and enter here: 4.281 million gallons
(Example: 128,243,400 rounds to 128.243 million gallons)

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $50.00
50 to 100 million gallons	$1.00
100 to 150 million gallons	$1.50
150 to 200 million gallons	$2.00
200 to 250 million gallons	$2.50
250 to 300 million gallons	$3.00
300 to 350 million gallons	$3.50
350 to 400 million gallons	$4.00
Over 400 million gallons	$4.50

4. Multiply Line 2 by Line 3. $ _____
For Example:
128.243 million gallons
x 1.50 dollars per million gallons
$192.36 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$35,000
entity with 4 to 5 permits	$50,000

Classification	Maximum Fee
entity with more than 5 permits	$175,000
city of the first class	$175,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $50.00 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table below, enter the maximum fee from the table on this line.
   c) If the amount on line 4 is less than the maximum fee and greater than the minimum fee, enter the amount from line 4. $ _____

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2002** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
Make checks payable to "DNR Waters", and mail to:
DNR Waters
500 Lafayette Road Box 48
St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours

STD

865114
2002

2002 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet _____ million gallons

If this number is greater than **20.0** million gallons an amendment is required along with an after-the-fact fee of $150.00. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75.00 (or $150.00 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the information below.

   a. New owner name:_____ Phone: ( )_____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items will be required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75.00 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, indicate why it is no longer needed.
   Note: the 2002 water use report and fee are still required.

Minnesota Rules 6115.0120 Fee Exemptions
1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

SIGNATURE_____ DATE_____ PHONE ( )_____

STD

965042
2002

2002 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: 965042 Installation: 1

Use: COMMERCIAL & INSTITUTIONAL
Source Type: GROUND WATER

Twp: 113 Rng: 15 Sec: 5 Qtr: CAA

NEW NSP-PRAIRIE ISLAND
JAMES BODENSTEINER
E R A D
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: 612-330-6625

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of gallons withdrawn in each month. Pumping Rate (gpm): 80 (Pump Design Flow)

January	50,000	July	285,600
February	30,600	August	277,000
March	34,900	September	363,100
April	32,600	October	130,200
May	124,100	November	73,700
June	238,400	December	33,900
		TOTAL	1,674,100

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE Jeanne M Adrian DATE 1/27/03 PHONE (651) 338-1121

STD

965042
2002

2002 DNR - FEE CALCULATION WORKSHEET

NEW NSP-PRAIRIE ISLAND, MINNEAPOLIS, MN 55401-1927
Permit: **965042** Use: **213** Permit Volume (MG/Y): **4.7** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $50.00. 1,674,100 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest thousandth, and enter here: 1.674 million gallons
(Example: 128,243,400 rounds to 128.243 million gallons)

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $50.00
50 to 100 million gallons	$1.00
100 to 150 million gallons	$1.50
150 to 200 million gallons	$2.00
200 to 250 million gallons	$2.50
250 to 300 million gallons	$3.00
300 to 350 million gallons	$3.50
350 to 400 million gallons	$4.00
Over 400 million gallons	$4.50

4. Multiply Line 2 by Line 3. $ _____
For Example:
128.243 million gallons
x 1.50 dollars per million gallons
$192.36 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$35,000
entity with 4 to 5 permits	$50,000

Classification	Maximum Fee
entity with more than 5 permits	$175,000
city of the first class	$175,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $50.00 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table below, enter the maximum fee from the table on this line.
   c) If the amount on line 4 is less than the maximum fee and greater than the minimum fee, enter the amount from line 4. $ _____

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2002** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
Make checks payable to "DNR Waters", and mail to:
DNR Waters
500 Lafayette Road Box 48
St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours

STD

965042
2002

2002 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet _____ million gallons

If this number is greater than **4.7** million gallons an amendment is required along with an after-the-fact fee of $150.00. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75.00 (or $150.00 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the information below.

   a. New owner name:_____ Phone: (___)_____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items will be required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75.00 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, indicate why it is no longer needed.
   Note: the 2002 water use report and fee are still required.

Minnesota Rules 6115.0120 Fee Exemptions
1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

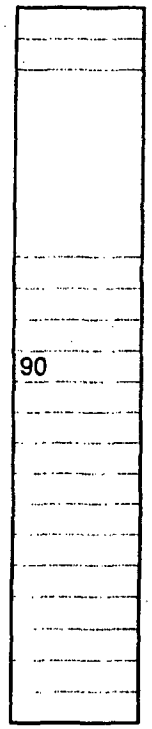
SIGNATURE_____ DATE _____ PHONE (___)_____

			Training Center Permit #96-5042							
2002	Meter Reading		Months Gallons	Avg. gpm Limit = 80 gpm	Total to date for Year	Annual Limit = 4.7E6 gal	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average		
January	18904200		5.000000E+04	1	5.00E+04	**4.70E+06**	6.00E+05	6.00E+05	1	
February	18954200		3.060000E+04	1	8.06E+04	**4.70E+06**	3.67E+05	4.84E+05	2	
March	18984800		3.490000E+04	1	1.16E+05	**4.70E+06**	4.19E+05	4.62E+05	3	
April	19019700		3.260000E+04	1	1.48E+05	**4.70E+06**	3.91E+05	4.44E+05	4	
May	19052300		1.241000E+05	3	2.72E+05	**4.70E+06**	1.49E+06	6.53E+05	5	
June	19176400		2.384000E+05	6	5.11E+05	**4.70E+06**	2.86E+06	1.02E+06	6	
July	19414800		2.856000E+05	6	7.96E+05	**4.70E+06**	3.43E+06	1.36E+06	7	
August	19700400		2.770000E+05	6	1.07E+06	**4.70E+06**	3.32E+06	1.61E+06	8	
September	19977400		3.631000E+05	8	1.44E+06	**4.70E+06**	4.36E+06	1.92E+06	9	
October	20340500		1.302000E+05	3	1.57E+06	**4.70E+06**	1.56E+06	1.88E+06	10	
November	20470700		7.370000E+04	2	1.64E+06	**4.70E+06**	8.84E+05	1.79E+06	11	
December	20544400		3.390000E+04	1	1.67E+06	**4.70E+06**	4.07E+05	1.67E+06	12	
January	20578300									
			1.674100E+06							

Screenhouse Cooling Water Permit #86-5114

2002	Beginning of Month Meter Reading		Months Gallons	Avg. gpm Limit = 50 gpm	Total to date for Year	Annual Limit = 2E7 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average		
January	11426000		4.443000E+05	10	4.44E+05	**2.00E+07**	5.33E+06	5.33E+06	1	
February	11870300		3.061000E+05	8	7.50E+05	**2.00E+07**	3.67E+06	4.50E+06	2	
March	12176400		2.743000E+05	6	1.02E+06	**2.00E+07**	3.29E+06	4.10E+06	3	
April	12450700		2.909000E+05	7	1.32E+06	**2.00E+07**	3.49E+06	3.95E+06	4	
May	12741600		3.165000E+05	7	1.63E+06	**2.00E+07**	3.80E+06	3.92E+06	5	
June	13058100		3.054000E+05	7	1.94E+06	**2.00E+07**	3.66E+06	3.88E+06	6	
July	13363500		3.204000E+05	7	2.26E+06	**2.00E+07**	3.84E+06	3.87E+06	7	
August	13683900		3.504000E+05	8	2.61E+06	**2.00E+07**	4.20E+06	3.91E+06	8	
September	14034300		5.003000E+05	12	3.11E+06	**2.00E+07**	6.00E+06	4.14E+06	9	
October	14534600		3.408000E+05	8	3.45E+06	**2.00E+07**	4.09E+06	4.14E+06	10	
November	14875400		3.679000E+05	9	3.82E+06	**2.00E+07**	4.41E+06	4.16E+06	11	
December	15243300		4.634000E+05	10	4.28E+06	**2.00E+07**	5.56E+06	4.28E+06	12	
January	15706700									
			4.280700E+06							

			Cooling Tower Permit #78-5153							
2002	Beginning of Month Meter Reading		Months Gallons	Avg. gpm Limit = 50 gpm	Total to date for Year	Annual Limit = 2.63E7 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average		
January	9673300		0.000000E+00	0	0.00E+00	**2.63E+07**	0.00E+00	0.00E+00	1	
February	9673300		0.000000E+00	0	0.00E+00	**2.63E+07**	0.00E+00	0.00E+00	2	
March	9673300		0.000000E+00	0	0.00E+00	**2.63E+07**	0.00E+00	0.00E+00	3	
April	9999990		4.286200E+05	10	4.29E+05	**2.63E+07**	5.14E+06	1.29E+06	4	New Meter installed reading 99999
May	428610		5.296800E+05	12	9.58E+05	**2.63E+07**	6.36E+06	2.30E+06	5	
June	958290		4.912900E+05	11	1.45E+06	**2.63E+07**	5.90E+06	2.90E+06	6	
July	1449580		5.141400E+05	12	1.96E+06	**2.63E+07**	6.17E+06	3.37E+06	7	
August	1963720		5.153900E+05	12	2.48E+06	**2.63E+07**	6.18E+06	3.72E+06	8	
September	2479110		5.720900E+05	13	3.05E+06	**2.63E+07**	6.87E+06	4.07E+06	9	
October	3051200		3.381400E+05	8	3.39E+06	**2.63E+07**	4.06E+06	4.07E+06	10	
November	3389340		1.614500E+05	4	3.55E+06	**2.63E+07**	1.94E+06	3.87E+06	11	
December	3550790		0.000000E+00	0	3.55E+06	**2.63E+07**	0.00E+00	3.55E+06	12	
January	3550790									
			3.550800E+06							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			River Water Permit #69-0172								
2002	Gallons from DMR	Evaporation	Total Months Gallons	Avg. gpm Limit = 630,000 gpm	Total to date for Year	Annual Limit = 2.15E11 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average			Intake Screen Backwash
January	1.92E+10	7.75E+08	2.003700E+10	448858	2.00E+10	**2.15E+11**	2.40E+11	2.40E+11	1		6.20E+07
February	8.16E+09	7.00E+08	8.911000E+09	221007	2.89E+10	**2.15E+11**	1.07E+11	1.74E+11	2		5.60E+07
March	1.72E+10	7.75E+08	1.804600E+10	404256	4.70E+10	**2.15E+11**	2.17E+11	1.88E+11	3		6.20E+07
April	1.12E+10	7.50E+08	1.198600E+10	277454	5.90E+10	**2.15E+11**	1.44E+11	1.77E+11	4		6.00E+07
May	6.12E+09	7.75E+08	6.952000E+09	155735	6.59E+10	**2.15E+11**	8.34E+10	1.58E+11	5		6.20E+07
June	1.17E+10	7.50E+08	1.246400E+10	288519	7.84E+10	**2.15E+11**	1.50E+11	1.57E+11	6		6.00E+07
July	2.45E+10	7.75E+08	2.536800E+10	568280	1.04E+11	**2.35E+11**	3.04E+11	1.78E+11	7		6.20E+07
August	2.38E+10	7.75E+08	2.464200E+10	552016	1.28E+11	**2.35E+11**	2.96E+11	1.93E+11	8		6.20E+07
September	2.23E+10	7.50E+08	2.308600E+10	534398	1.51E+11	**2.35E+11**	2.77E+11	2.02E+11	9		6.00E+07
October	2.12E+10	7.75E+08	2.205100E+10	493974	1.74E+11	**2.35E+11**	2.65E+11	2.08E+11	10		6.20E+07
November	1.28E+10	7.50E+08	1.361000E+10	315046	1.87E+11	**2.35E+11**	1.63E+11	2.04E+11	11		6.00E+07
December	1.24E+10	7.75E+08	1.325500E+10	296931	2.00E+11	**2.35E+11**	1.59E+11	2.00E+11	12		6.20E+07
			2.004080E+11	381294							

			121/122 Deepwell Permit #69-0171								
2002	Beginning of Month 121 Deepwell Meter Reading	Beginning of Month 122 Deepwell Meter Reading	Months Gallons	Avg. gpm Limit = 600 gpm	Total to date for Year	Annual Limit = 3.15E8 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average		121 DEEPWELL MONTHS GALLONS	122 DEEPWELL MONTHS GALLONS
January	22304700	23300600	2.033500E+06	46	2.03E+06	**3.15E+08**	2.44E+07	2.44E+07	1	2.010200E+06	2.330000E+04
February	24314900	23323900	4.157500E+06	103	6.19E+06	**3.15E+08**	4.99E+07	3.71E+07	2	3.557500E+06	6.000000E+05
March	27872400	23923900	2.558500E+06	57	8.75E+06	**3.15E+08**	3.07E+07	3.50E+07	3	2.247500E+06	3.110000E+05
April	30119900	24234900	2.126600E+06	49	1.09E+07	**3.15E+08**	2.55E+07	3.26E+07	4	2.130000E+04	2.105300E+06
May	30141200	26340200	2.465300E+06	55	1.33E+07	**3.15E+08**	2.96E+07	3.20E+07	5	1.968300E+06	4.970000E+05
June	32109500	26837200	1.974900E+06	46	1.53E+07	**3.15E+08**	2.37E+07	3.06E+07	6	1.301100E+06	6.738000E+05
July	33410600	27511000	2.720000E+06	61	1.80E+07	**3.15E+08**	3.26E+07	3.09E+07	7	2.338700E+06	3.813000E+05
August	35749300	27892300	2.022900E+06	45	2.01E+07	**3.15E+08**	2.43E+07	3.01E+07	8	4.010000E+04	1.982800E+06
September	35789400	29875100	2.719700E+06	63	2.28E+07	**3.15E+08**	3.26E+07	3.04E+07	9	2.283800E+06	4.359000E+05
October	38073200	30311000	1.724400E+06	39	2.45E+07	**3.15E+08**	2.07E+07	2.94E+07	10	2.562000E+05	1.468200E+06
November	38329400	31779200	3.376400E+06	78	2.79E+07	**3.15E+08**	4.05E+07	3.04E+07	11	2.174500E+06	1.201900E+06
December	40503900	32981100	2.687900E+06	60	3.06E+07	**3.15E+08**	3.23E+07	3.06E+07	12	7.591000E+05	1.928800E+06
January	41263000	34909900									
										1.895830E+07	1.160930E+07

STD

690171
2003

2003 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **690171** Installation: **121**

Use: **COMMERCIAL & INSTITUTIONAL**
Source Type: **GROUND WATER**

Twp: **113** Rng: **15** Sec: **5** Qtr:

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND WELLS
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 300 gpm (pump design flow)

January	1,179,950	July	91,600
February	1,636,550	August	145,000
March	29,200	September	1,958,600
April	1,679,800	October	768,700
May	753,700	November	1,104,100
June	999,500	December	302,100
		TOTAL	10,648,800

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 01/16/04 PHONE (651) 388-1121

STD

690171
2003

2003 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **690171** Installation: **122**

Use: **COMMERCIAL & INSTITUTIONAL**
Source Type: **GROUND WATER**

Twp: **113** Rng: **15** Sec: **5** Qtr:

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND WELLS
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 300 gpm (pump design flow)

January	1,229,600	July	1,712,400
February	907,300	August	1,073,900
March	1,868,000	September	640,900
April	522,700	October	2,485,500
May	1,052,100	November	887,500
June	810,700	December	1,058,300
		TOTAL	14,248,900

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 01/16/04 PHONE (651) 388-1121

STD

690171
2003

2003 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **690171** Use: **213** Permit Volume (MG/Y): **315.0** Installations: **2** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 24,897,700 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: (Example: 75,243,400 rounds to 75.2 million gallons) 24.9 million gallons

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $101
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. $ _____
   For Example: 75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ _____

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2003** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
   Make checks payable to "DNR Waters", and mail forms and fees to: **DNR Waters**
   500 Lafayette Road Box 48
   St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours
This report and fee are due by February 15th

STD

690171
2003

2003 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet _____ million gallons

If this number is greater than **315.0** million gallons an amendment is required along with an after-the-fact fee of $150. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75 (or $150 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the new information below.

   a. New owner name: _____ Phone: (____) _____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items are required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, please indicate why it is no longer needed. **Note: the 2003 water use report and fee are still required.**

Fee Exemptions Minnesota Rules 6115.0120

1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

SIGNATURE _____ DATE _____ PHONE (____) _____

STD

690172
2003

2003 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **690172** Installation: **1**

Use: **NUCLEAR POWER PLANT**
Source Type: **STREAM/RIVER**
Source Name: **MISSISSIPPI**

Twp: **113** Rng: **15** Sec: **5** Qtr: **ADD**

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND RIVER
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-388-1121**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 549,933 (Highest monthly average)

January	14,155,000,000	July	23,856,000,000
February	12,241,000,000	August	24,549,000,000
March	15,335,000,000	September	17,390,000,000
April	10,843,000,000	October	20,855,000,000
May	6,506,000,000	November	18,146,000,000
June	11,733,000,000	December	17,181,000,000
		TOTAL	192,790,000,000

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
____ 2. Flow Rate Meter with: ____ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
✓ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 01/16/04 PHONE (651) 388-1121

STD

690172
2003

2003 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **690172** Use: **226** Permit Volume (MG/Y): **235000.0** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 192,790,000,000 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: (Example: 75,243,400 rounds to 75.2 million gallons) 192,790.0 million gallons

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $101
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. $ _____
   For Example:
   75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ _____

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2003** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
   Make checks payable to "DNR Waters", and mail forms and fees to: **DNR Waters**
   500 Lafayette Road Box 48
   St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours
This report and fee are due by February 15th

STD

690172
2003

2003 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet _____ million gallons

If this number is greater than **235000.0** million gallons an amendment is required along with an after-the-fact fee of $150. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75 (or $150 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the new information below.

   a. New owner name: _____ Phone: ( ) _____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items are required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, please indicate why it is no longer needed. **Note: the 2003 water use report and fee are still required.**

Fee Exemptions Minnesota Rules 6115.0120

1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

SIGNATURE _____ DATE _____ PHONE ( ) _____

STD

785153
2003

2003 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **785153** Installation: **2**

Use: **STEAM POWER COOLING - WET TOWER**
Source Type: **GROUND WATER**
Source Name: **QWTA**

Well Unique Number: 611076
Twp: **113** Rng: **15** Sec: **5** Qtr: **DAAD**

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND CT WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 40 gpm (Pump design flow)

January	0	July	607,820
February	0	August	426,930
March	0	September	726,520
April	849,580	October	411,080
May	458,980	November	148,790
June	533,490	December	0
		TOTAL	4,163,190

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 01/16/04 PHONE (651) 388-1121

STD

785153
2003

2003 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **785153** Use: **223** Permit Volume (MG/Y): **15.0** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 4,163,190 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: (Example: 75,243,400 rounds to 75.2 million gallons) 4.2 million gallons

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $101
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. $ _____
   For Example:
   75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ _____

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2003** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
   Make checks payable to "DNR Waters", and mail forms and fees to:
   DNR Waters
   500 Lafayette Road Box 48
   St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours
This report and fee are due by February 15th

STD

785153
2003

2003 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet 4.2 million gallons

If this number is greater than **15.0** million gallons an amendment is required along with an after-the-fact fee of $150. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75 (or $150 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).
   f. See note 1.f. below.

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the new information below.

   a. New owner name: _____ Phone: ( ) _____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items are required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, please indicate why it is no longer needed. **Note: the 2003 water use report and fee are still required.**

Fee Exemptions Minnesota Rules 6115.0120
1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

SIGNATURE [signature] DATE 01/29/04 PHONE (651) 388-1121

1.f. Water Appropriation Permit Number 78-5153 was updated August 22, 2003 to reflect a company name change, removal of installation 1 which has been replaced by installation 2, and decreases in the pumping rate and authorized volume to reflect current operations. It appears the well purpose was also inadvertently changed. The correct purpose for this well is "Pump motor cooling and lubrication of pump seals in the cooling tower system on a continuous basis."

STD

865114
2003

2003 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **865114** Installation: **1**

Use: **POWER GENERATION**
Source Type: **GROUND WATER**
Source Name: **QWTA**

Well Unique Number: 402599
Twp: **113** Rng: **15** Sec: **5** Qtr: **ADDC**

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND BEARING WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 50 gpm (Pump design flow)

January	678,100	July	1,193,500
February	609,900	August	729,600
March	525,300	September	1,038,000
April	725,280	October	1,253,700
May	887,920	November	1,074,700
June	1,139,500	December	1,114,000
		TOTAL	10,969,500

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 01/16/04 PHONE (651) 388-1121

STD

865114
2003

2003 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **865114** Use: **229** Permit Volume (MG/Y): **20.0** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 10,969,500 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: (Example: 75,243,400 rounds to 75.2 million gallons) 11.0 million gallons

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee of $101
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. $ _____
   For Example:
   75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ _____

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2003** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
   Make checks payable to "DNR Waters", and mail forms and fees to: **DNR Waters**
   500 Lafayette Road Box 48
   St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours
This report and fee are due by February 15th

STD

865114
2003

2003 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet _____ million gallons

If this number is greater than **20.0** million gallons an amendment is required along with an after-the-fact fee of $150. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75 (or $150 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the new information below.

   a. New owner name: _____ Phone: (____) _____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items are required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, please indicate why it is no longer needed. **Note: the 2003 water use report and fee are still required.**

Fee Exemptions Minnesota Rules 6115.0120

1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

SIGNATURE _____ DATE _____ PHONE (____) _____

OTS
MULTI

965042
2003

2003 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **965042** Installation: **1**

Primary Use: **COMMERCIAL & INSTITUTIONAL**
Source Type: **GROUND WATER**
Source Name: **QBUA**

Well Unique Number: 256074
Twp: **113** Rng: **15** Sec: **5** Qtr: **CAAD**

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND TRAINING CENTER WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. List the number of gallons withdrawn in each month. Pumping Rate (gpm): 80 gpm (Pump design flow)

Installation: 1 **First Use: 213** **COMMERCIAL & INSTITUTIONAL**

January	43,800	July	56,600
February	28,500	August	68,200
March	33,300	September	130,400
April	44,700	October	93,000
May	29,700	November	41,600
June	51,300	December	25,900

First Use TOTAL 647,000

B. Affidavit of compliance - Measurement method (check one)

___ 1. Flow Meter
✓ 2. Flow Rate Meter with: ✓ Totalizer or ___ Hour meter
___ 3. Timing Device: ___ Hour meter or ___ Electric meter x gpm
___ 4. Alternate method: If not already approved, enclose request for approval.
___ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 01/16/09 PHONE (651) 388-1121

OTS
MULTI

965042
2003

2003 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: 965042 Installation: 1

1. List the number of gallons withdrawn for each use by month. Pumping Rate (gpm): 80 gpm (Pump design flow)

Installation: 1 **Second Use: 283 LANDSCAPING IRRIGATION**

January	0	July	209,000
February	0	August	267,000
March	0	September	398,300
April	0	October	109,200
May	1,300	November	0
June	252,200	December	0

Second Use TOTAL 1,237,000

SIGNATURE [signature] DATE 01/16/04 PHONE ( )

OTS
MULTI

965042
2003

2003 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927

Permit Volume (MG/Y): **4.7** Number of installations: **1** Permit: **965042** County: **25**

1. Fill out the table below using one row for each of your permitted use codes.

Fee Rate: See the Fee Calculation Table Key on the next page for instructions.

Non Once-Through System Use Rate Table A based on column D

A. Use Code	B. Total Pumped per use (gallons)	C. Total Pumped per use (million gallons)	D. Total Pumped Sum of column C
213	647,000	0.6	1.8
283	1,237,000	1.2	

Fee Rate (from Table A)	$ /million gallons
Use Fee (Total Pumped x Rate)	$

Once-Through System Use Rate Table B

A. Use Code	B. Total Pumped (gallons)	C. Total Pumped (million gallons)

Fee Rate	
Use Fee (Total Pumped x Rate)	$

2. Sum the use fees for non once-through and once-through pumping: $ _____

3. If the amount on line 2 is less than $101, enter $101 on this line, otherwise enter the amount from line 2 here: $ _____

4. Complete the Data Verification Form. If a fee is required for an amendment or transfer, enter the amount here: $ _____

5. **Add lines 3 and 4 and enter the amount on this line.** This is your **2003** water appropriation fee due. Return this fee with the water use reports and all required additional information. $ _____

Make checks payable to "DNR Waters", and mail forms and fees to:
DNR Waters
500 Lafayette Road Box 48
St Paul, MN 55155-4048

If you have questions please call (651) 296-0435 24 hours
This report and fee are due by February 15th

OTS
MULTI

FEE CALCULATION TABLE KEY

A. Use Code - The code corresponding to the purpose for which the water was appropriated. Fill out one row for each of your permitted water uses.

B. Total Pumped (gallons) - The sum of all appropriations corresponding to the use code in column A. Add the totals from each section of the installation worksheets corresponding to the use code in column A.

C. Total Pumped (million gallons) - Divide the amount in column B by one million (1,000,000). Round to the third decimal place. *For example: 10,745,643 gallons would become 10.746 million gallons.*

D. Combined Water Used - Combine all non once-through system pumping to determine the volume of water to be charged at the Table A rate.

Use Fee - Non Once-through Systems - Multiply the total volume in column D by the fee rate.
Once-through Systems - Multiply the volume in column C by the fee rate.

Fee Rate Table A. - Determine fee based on the combined volume in column D.

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	Minimum permit fee $100
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

Fee Rate Table B. - The reporting status for which you qualify is marked with an "X".
If you change your reporting status, you must include your certificate of exemptions.

	Reporting Status	Fee Rate ($ per million gallons)
	Non-profit corporations and school districts.	$150 per million gallons
X	All other once through heating or cooling systems.	$200 per million gallons

OTS
MULTI

965042
2003

2003 PERMIT DATA VERIFICATION FORM

Enter the total volume of water pumped from the Fee Calculation Worksheet _____ million gallons

If this number is greater than **4.7** million gallons an amendment is required along with an after the fact fee of $150.00. Enter this amount on line 4 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no permit changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume, enter $75 (or $150 as specified above) on line 4 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the new information below.

   New owner name: _____ Phone: _____

   New address: _____

   _____

   Date of land sale or transfer: _____

   The following items are required from the new owner to transfer the permit:
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.)
   B. $75.00 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, please indicate why it is no longer needed.
   Note: the 2003 water use report and fee are still required.

Fee Exemptions Minnesota Rules 6115.0120

1. A change in mailing address or authorized agent when land ownership has not changed.
2. A transfer of a permit within the immediate family.
3. A change in pump location on surface water sources for the same operation.
4. A replacement well completed at the same depth in the same aquifer.
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage.

SIGNATURE _____ DATE _____ PHONE ( ) _____

STD

690171
2004

2004 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **690171** Installation: **121**

Use: **NUCLEAR POWER PLANT**
Source Type: **GROUND WATER**

Well Unique Number: 256120
Twp: **113** Rng: **15** Sec: **5** Qtr: **ACDA**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND WELLS
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 300 (Pump design flow)

January	1,186,900	July	1,686,300
February	1,421,300	August	660,900
March	603,100	September	2,907,900
April	850,000	October	3,222,200
May	1,193,700	November	2,619,400
June	145,800	December	2,079,400
		TOTAL	18,576,900

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 1/31/05 PHONE (651) 388-1121

STD

690171
2004

2004 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **690171** Installation: **122**

Use: **NUCLEAR POWER PLANT**
Source Type: **GROUND WATER**

Well Unique Number: 256121
Twp: **113** Rng: **15** Sec: **5** Qtr: **ACDD**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND WELLS
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 300 (Pump design flow)

January	860,800	July	541,700
February	180,600	August	1,555,000
March	1,202,300	September	245,500
April	1,019,000	October	61,600
May	400,700	November	3,292,000
June	1,587,500	December	2,389,500
		TOTAL	13,336,200

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE RK Clemett DATE 1/31/05 PHONE (651) 388-1121

STD

690171
2004

2004 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **690171** Use: **226** Permit Volume (MG/Y): **50.0** Installations: **2** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 31,913,100 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: (Example: 75,243,400 rounds to 75.2 million gallons) 31.9 million gallons

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE
Up to 50 million gallons	Minimum permit fee $101
	FEE RATE (per million gallons)
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. For Example:
   75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee
   $ _____

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ _____ (355)

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____ (354)

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2004** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
   Make checks payable to "MN DNR Waters", and mail forms and fees to: **Minnesota DNR - OMB**
   500 Lafayette Rd Box 10
   St Paul, MN 55155

Check Amt:
Check #

If you have questions please call (651) 296-0435 24 hours
This report and fee are due by February 15th

STD

690171
2004

2004 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet _____ million gallons

If this number is greater than **50.0** million gallons an amendment is required along with an after-the-fact fee of $150. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75 (or $150 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the new information below.

   a. New owner name: _____ Phone: (____) _____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items are required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, please indicate why it is no longer needed. **Note: the 2004 water use report and fee are still required.**

Fee Exemptions Minnesota Rules 6115.0120

1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

SIGNATURE _____ DATE _____ PHONE (____) _____

STD

690172
2004

2004 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **690172** Installation: **1**

Use: **NUCLEAR POWER PLANT**
Source Type: **STREAM/RIVER**
Source Name: **MISSISSIPPI**

Twp: **113** Rng: **15** Sec: **5** Qtr: **ADD**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND RIVER
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-388-1121**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 547,872 (highest monthly average)

January	16,914,000,000	July	24,128,000,000
February	14,956,000,000	August	24,457,000,000
March	15,974,000,000	September	16,107,000,000
April	11,205,000,000	October	12,372,000,000
May	6,529,000,000	November	14,624,000,000
June	11,586,000,000	December	15,778,000,000

TOTAL 184,630,000,000

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
____ 2. Flow Rate Meter with: ____ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
X 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 1/31/05 PHONE (651) 388-1121

STD

690172
2004

2004 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **690172** Use: **226** Permit Volume (MG/Y): **235000.0** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 184,630,000,000 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: (Example: 75,243,400 rounds to 75.2 million gallons) 184,630.0 million gallons

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE
Up to 50 million gallons	Minimum permit fee $101
	FEE RATE (per million gallons)
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. For Example:
   75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee
   $ _____

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ _____ (353)

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____ (354)

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2004** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
   Make checks payable to "MN DNR Waters", and mail forms and fees to: **Minnesota DNR - OMB**
   500 Lafayette Rd Box 10
   St Paul, MN 55155

   Check Amt:
   Check #

If you have questions please call (651) 296-0435 24 hours
This report and fee are due by February 15th

STD

690172
2004

2004 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet _____ million gallons

If this number is greater than **235000.0** million gallons an amendment is required along with an after-the-fact fee of $150. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75 (or $150 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the new information below.

   a. New owner name:_____ Phone: (____)_____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items are required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, please indicate why it is no longer needed. **Note: the 2004 water use report and fee are still required.**

Fee Exemptions Minnesota Rules 6115.0120

1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

SIGNATURE_____ DATE_____ PHONE (____)_____

STD

785153
2004

2004 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **785153** Installation: **2**

Use: **NUCLEAR POWER PLANT**
Source Type: **GROUND WATER**
Source Name: **QWTA**

Well Unique Number: 611076
Twp: **113** Rng: **15** Sec: **5** Qtr: **DAAD**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND CT WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 40 (Pump design flow)

January	0	July	760,410
February	0	August	646,130
March	80,280	September	650,850
April	690,270	October	597,770
May	723,930	November	366,480
June	755,590	December	8,720
		TOTAL	5,280,430

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE TK Clewett DATE 1/31/05 PHONE (651) 388-1121

STD

785153
2004

2004 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **785153** Use: **226** Permit Volume (MG/Y): **15.0** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 5,280,430 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: (Example: 75,243,400 rounds to 75.2 million gallons) 5.3 million gallons

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE
Up to 50 million gallons	Minimum permit fee $101
	FEE RATE (per million gallons)
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. $ _____
   For Example: 75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ _____ (359)

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____ (354)

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2004** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
   Make checks payable to "MN DNR Waters", and mail forms and fees to: **Minnesota DNR - OMB**
   500 Lafayette Rd Box 10
   St Paul, MN 55155

Check Amt:
Check #

If you have questions please call (651) 296-0435 24 hours
This report and fee are due by February 15th

STD

785153
2004

2004 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet _____ million gallons

If this number is greater than **15.0** million gallons an amendment is required along with an after-the-fact fee of $150. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75 (or $150 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the new information below.

   a. New owner name: _____ Phone: ( ) _____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items are required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, please indicate why it is no longer needed. **Note: the 2004 water use report and fee are still required.**

Fee Exemptions Minnesota Rules 6115.0120

1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

SIGNATURE _____ DATE _____ PHONE ( ) _____

STD

865114
2004

2004 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **865114** Installation: **1**

Use: **POWER GENERATION**
Source Type: **GROUND WATER**
Source Name: **QWTA**

Well Unique Number: 402599
Twp: **113** Rng: **15** Sec: **5** Qtr: **ADDC**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND BEARING WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.
____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 50 (Pump design flow)

January	1,248,800	July	1,478,900	
February	1,010,000	August	1,336,300	
March	1,173,300	September	1,321,700	
April	1,323,200	October	1,379,000	*
May	1,186,700	November	1,379,000	*
June	1,301,900	December	1,379,000	*
		TOTAL	15,517,800	

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

* The flow totalizer malfunctioned and was bypassed on 10/18/04. The spare totalizer was sent offsite to the vendor for calibration and will be installed as soon as possible upon its return. Used the average of July, August & September, 2004 to estimate October, November & December 2004 use.

SIGNATURE ZK Elwitt DATE 1/31/05 PHONE ( )

STD

865114
2004

2004 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **865114** Use: **229** Permit Volume (MG/Y): **20.0** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 15,517,800 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: (Example: 75,243,400 rounds to 75.2 million gallons) 15.5 million gallons

3. Find your fee rate on the table below and enter it here: $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE
Up to 50 million gallons	Minimum permit fee $101
	FEE RATE (per million gallons)
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. For Example:
   75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee
   $ _____

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

For a municipality that furnishes electric service and cogenerates steam for home heating $10,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ _____ (355)

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____ (354)

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2004** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ _____
   Make checks payable to "MN DNR Waters", and mail forms and fees to: **Minnesota DNR - OMB**
   500 Lafayette Rd Box 10
   St Paul, MN 55155

   Check Amt:
   Check #

If you have questions please call (651) 296-0435 24 hours
This report and fee are due by February 15th

STD

865114
2004

2004 PERMIT DATA VERIFICATION FORM

Enter the number from line 2 of the Fee Calculation Worksheet _____ million gallons

If this number is greater than **20.0** million gallons an amendment is required along with an after-the-fact fee of $150. Enter this amount on line 6 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume enter $75 (or $150 as specified above) on line 6 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the new information below.

   a. New owner name:_____ Phone: ( )_____

   b. New address: _____

   _____

   c. Date of land sale or transfer: _____

   The following items are required from the new owner to transfer the permit.
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.).
   B. $75 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, please indicate why it is no longer needed. **Note: the 2004 water use report and fee are still required.**

Fee Exemptions Minnesota Rules 6115.0120

1. A change in mailing address or authorized agent when land ownership has not changed
2. A transfer of a permit within the immediate family
3. A change in pump location on surface water sources for the same operation
4. A replacement well completed at the same depth in the same aquifer
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage

SIGNATURE_____ DATE _____ PHONE ( )_____

OTS
MULTI

965042
2004

2004 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **965042** Installation: **1**

Primary Use: **COMMERCIAL & INSTITUTIONAL**
Source Type: **GROUND WATER**
Source Name: **QBUA**

Well Unique Number: 256074
Twp: **113** Rng: **15** Sec: **5** Qtr: **CAAD**
Goodhue County
Please correct address if needed:

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND TRAINING CENTER WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Phone: **612-330-6625**

A. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 80 (Pump design flow)

Installation: 1 **First Use: 213** **COMMERCIAL & INSTITUTIONAL**

January	37,800	July	103,400
February	29,200	August	190,400
March	32,200	September	71,600
April	37,700	October	74,000
May	48,400	November	63,600
June	66,700	December	91,800

First Use TOTAL 846,800

B. Affidavit of compliance - Measurement method (check one)

___ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ___ Hour meter
___ 3. Timing Device: ___ Hour meter or ___ Electric meter x gpm
___ 4. Alternate method: If not already approved, enclose request for approval.
___ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 1/31/05 PHONE (651) 388-1121

OTS
MULTI

965042
2004

2004 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **965042** Installation: **1**

1. List the number of **gallons** withdrawn for each use by month. Pumping Rate (gpm): 80 (Pump design flow)

Installation: 1 **Second Use: 283 LANDSCAPING IRRIGATION**

January	0	July	108,900
February	0	August	157,700
March	0	September	140,900
April	57,300	October	104,900
May	197,600	November	0
June	210,800	December	0

Second Use TOTAL 978,100

SIGNATURE [signature] DATE 1/21/05 PHONE (651) 388-1121

OTS
MULTI

965042
2004

2004 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927

Permit Volume (MG/Y): **4.7** Number of installations: **1** Permit: **965042** County: **25**

1. Fill out the table below using one row for each of your permitted use codes.

Fee Rate: See the Fee Calculation Table Key on the next page for instructions.

Non Once-Through System Use Rate Table A based on column D

A. Use Code	B. Total Pumped per use (gallons)	C. Total Pumped per use (million gallons)	D. Total Pumped Sum of column C
213	846,800	0.8	1.8
283	978,100	1.0	

Fee Rate (from Table A)	$	/million gallons
Use Fee (Total Pumped x Rate)	$	

Once-Through System Use Rate Table B

A. Use Code	B. Total Pumped (gallons)	C. Total Pumped (million gallons)

Fee Rate	
Use Fee (Total Pumped x Rate)	$

2. Sum the use fees for non once-through and once-through pumping: $ _____

3. If the amount on line 2 is less than $101, enter $101 on this line, otherwise enter the amount from line 2 here: $ _____ (355)

4. Complete the Data Verification Form. If a fee is required for an amendment or transfer, enter the amount here: $ _____ (354)

5. **Add lines 3 and 4 and enter the amount on this line.** This is your **2004** water appropriation fee due. Return this fee with the water use reports and all required additional information. $ _____

Make checks payable to "MN DNR Waters", and mail forms and fees to:
Minnesota DNR - OMB
500 Lafayette Rd Box 10
St Paul, MN 55155

Check Amt:
Check #

If you have questions please call (651) 296-0435 24 hours
This report and fee are due by February 15th

			121/122 Deepwell Permit #69-0171								
2004	Beginning of Month 121 Deepwell Meter Reading	Beginning of Month 122 Deepwell Meter Reading	Months Gallons	Avg. gpm Limit = 600 gpm	Total to date for Year	Annual Limit = 3.15E8 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average		121 DEEPWELL MONTHS GALLONS	122 DEEPWELL MONTHS GALLONS
January	51911800										
January	52897600										
January	31229700	49158800	2.05E+06	46	2.05E+06	**3.15E+08**	2.46E+07	2.46E+07	1	1186900	860800
February	31430800	50019600	1.60E+06	40	3.65E+06	**3.15E+08**	1.92E+07	2.19E+07	2	1421300	180600
March	32852100	50200200	1.81E+06	40	5.46E+06	**3.15E+08**	2.17E+07	2.18E+07	3	603100	1202300
April	33455200	51402500	1.87E+06	43	7.32E+06	**3.15E+08**	2.24E+07	2.20E+07	4	850000	1019000
May	34305200	52421500	1.59E+06	36	8.92E+06	**3.15E+08**	1.91E+07	2.14E+07	5	1193700	400700
June	35498900	52822200	1.73E+06	40	1.07E+07	**3.15E+08**	2.08E+07	2.13E+07	6	145800	1587500
July	35644700	54409700	2.23E+06	50	1.29E+07	**5.00E+07**	2.67E+07	2.21E+07	7	1686300	541700
August	37331000	54951400	2.22E+06	50	1.51E+07	**5.00E+07**	2.66E+07	2.26E+07	8	660900	1555000
September	37991900	56506400	3.15E+06	73	1.82E+07	**5.00E+07**	3.78E+07	2.43E+07	9	2907900	245500
October	40899800	56751900	3.28E+06	74	2.15E+07	**5.00E+07**	3.94E+07	2.58E+07	10	3222200	61600
November	44122000	56813500	5.91E+06	137	2.74E+07	**5.00E+07**	7.09E+07	2.99E+07	11	2619400	3292000
December	46741400	60105500	4.47E+06	100	3.19E+07	**5.00E+07**	5.36E+07	3.19E+07	12	2079400	2389500
January	48820800	62495000									
								Year's Total =		18576900	13336200
								Sum of 121 & 122 =		31913100	
Pumping Rate (gpm): 300 gpm (pump design flow)											
Flow Rate Meter with: Totalizer											

			River Water Permit #69-0172								
2004	Gallons from DMR	Evaporation	Total Months Gallons	Avg. gpm Limit = 630,000 gpm	Total to date for Year	Annual Limit = 2.15E11 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average			Intake Screen Backwash
January	1.61E+10	7.75E+08	1.691400E+10	378898	1.69E+10	**2.35E+11**	2.03E+11	2.03E+11	1		6.20E+07
February	1.42E+10	7.00E+08	1.495600E+10	370933	3.19E+10	**2.35E+11**	1.79E+11	1.91E+11	2		5.60E+07
March	1.51E+10	7.75E+08	1.597400E+10	357841	4.78E+10	**2.35E+11**	1.92E+11	1.91E+11	3		6.20E+07
April	1.04E+10	7.50E+08	1.120500E+10	259375	5.90E+10	**2.35E+11**	1.34E+11	1.77E+11	4		6.00E+07
May	5.69E+09	7.75E+08	6.529000E+09	146259	6.56E+10	**2.35E+11**	7.83E+10	1.57E+11	5		6.20E+07
June	1.08E+10	7.50E+08	1.158600E+10	268194	7.72E+10	**2.35E+11**	1.39E+11	1.54E+11	6		6.00E+07
July	2.33E+10	7.75E+08	2.412800E+10	540502	1.01E+11	**2.35E+11**	2.90E+11	1.74E+11	7		6.20E+07
August	2.36E+10	7.75E+08	2.445700E+10	547872	1.26E+11	**2.35E+11**	2.93E+11	1.89E+11	8		6.20E+07
September	1.53E+10	7.50E+08	1.610700E+10	372847	1.42E+11	**2.35E+11**	1.93E+11	1.89E+11	9		6.00E+07
October	1.15E+10	7.75E+08	1.237200E+10	277151	1.54E+11	**2.35E+11**	1.48E+11	1.85E+11	10		6.20E+07
November	1.38E+10	7.50E+08	1.462400E+10	338519	1.69E+11	**2.35E+11**	1.75E+11	1.84E+11	11		6.00E+07
December	1.49E+10	7.75E+08	1.577800E+10	353450	1.85E+11	**2.35E+11**	1.89E+11	1.85E+11	12		6.20E+07
	Year's Total =		1.846300E+11	351275							
Pumping Rate (gpm): Use highest monthly daily average											
Measurement method = Alternate Method											

			Cooling Tower Permit #78-5153								
2004	Beginning of Month Meter Reading		Months Gallons	Avg. gpm Limit = 50 gpm	Total to date for Year	Annual Limit = 2.63E7 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average			
January	7713980		0	0	0.00E+00	**1.50E+07**	0.00E+00	0.00E+00	1		
February	7713980		0	0	0.00E+00	**1.50E+07**	0.00E+00	0.00E+00	2		
March	7713980		80280	2	8.03E+04	**1.50E+07**	9.63E+05	3.21E+05	3		
April	7794260		690270	16	7.71E+05	**1.50E+07**	8.28E+06	2.31E+06	4		
May	8484530		723930	16	1.49E+06	**1.50E+07**	8.69E+06	3.59E+06	5		
June	9208460		755590	17	2.25E+06	**1.50E+07**	9.07E+06	4.50E+06	6		
July	9964050		760410	17	3.01E+06	**1.50E+07**	9.12E+06	5.16E+06	7		
August	10724460		646130	14	3.66E+06	**1.50E+07**	7.75E+06	5.48E+06	8		
September	11370590		650850	15	4.31E+06	**1.50E+07**	7.81E+06	5.74E+06	9		
October	12021440		597770	13	4.91E+06	**1.50E+07**	7.17E+06	5.89E+06	10		
November	12619210		366480	8	5.27E+06	**1.50E+07**	4.40E+06	5.75E+06	11		
December	12985690		8720	0	5.28E+06	**1.50E+07**	1.05E+05	5.28E+06	12		
January	12994410										
	Year's Total =		5280430								
Pumping Rate (gpm): 40 gpm (Pump desing flow)											
Flow Rate Meter with: Totalizer											

			Screenhouse Cooling Water Permit #86-5114						
2004	Beginning of Month Meter Reading		Months Gallons	Avg. gpm Limit = 50 gpm	Total to date for Year	Annual Limit = 2E7 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average	
January	21380400		1.248800E+06	28	1.25E+06	**2.00E+07**	1.50E+07	1.50E+07	1
February	22629200		1.010000E+06	25	2.26E+06	**2.00E+07**	1.21E+07	1.36E+07	2
March	23639200		1.173300E+06	26	3.43E+06	**2.00E+07**	1.41E+07	1.37E+07	3
April	24812500		1.323200E+06	31	4.76E+06	**2.00E+07**	1.59E+07	1.43E+07	4
May	26135700		1.186700E+06	27	5.94E+06	**2.00E+07**	1.42E+07	1.43E+07	5
June	27322400		1.301900E+06	30	7.24E+06	**2.00E+07**	1.56E+07	1.45E+07	6
July	28624300		1.478900E+06	33	8.72E+06	**2.00E+07**	1.77E+07	1.50E+07	7
August	30103200		1.336300E+06	30	1.01E+07	**2.00E+07**	1.60E+07	1.51E+07	8
September	31439500		1.321700E+06	31	1.14E+07	**2.00E+07**	1.59E+07	1.52E+07	9
October	32761200		1.379000E+06	31	1.28E+07	**2.00E+07**	1.65E+07	1.53E+07	10
November	34140200		1.379000E+06	32	1.41E+07	**2.00E+07**	1.65E+07	1.54E+07	11
December	35519200		1.379000E+06	31	1.55E+07	**2.00E+07**	1.65E+07	1.55E+07	12
January	36898200								
			1.551780E+07						

For Oct, Nov & Dec, used average of July, Aug & Sept 2004 as flow totalizer was plugged & bypassed.

			Training Center Permit #96-5042								
2004	Meter Reading		Well Months Gallons	Avg. gpm Limit = 80 gpm	Well Total to date for Year	Well Annual Limit = 4.7E6 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average		Commercial & Institutional Use (Well Total minus Lawn Use)	
January	22462300		37800	1	3.78E+04	**4.70E+06**	4.54E+05	4.54E+05	1	37800	
February	22500100		29200	1	6.70E+04	**4.70E+06**	3.50E+05	4.02E+05	2	29200	
March	22529300		32200	1	9.92E+04	**4.70E+06**	3.86E+05	3.97E+05	3	32200	
April	22561500		95000	2	1.94E+05	**4.70E+06**	1.14E+06	5.83E+05	4	37700	
May	22656500		246000	6	4.40E+05	**4.70E+06**	2.95E+06	1.06E+06	5	48400	
June	22902500		277500	6	7.18E+05	**4.70E+06**	3.33E+06	1.44E+06	6	66700	
July	23180000		212300	5	9.30E+05	**4.70E+06**	2.55E+06	1.59E+06	7	103400	
August	23392300		348100	8	1.28E+06	**4.70E+06**	4.18E+06	1.92E+06	8	190400	
September	23740400		212500	5	1.49E+06	**4.70E+06**	2.55E+06	1.99E+06	9	71600	
October	23952900		178900	4	1.67E+06	**4.70E+06**	2.15E+06	2.00E+06	10	74000	
November	24131800		63600	1	1.73E+06	**4.70E+06**	7.63E+05	1.89E+06	11	63600	
December	24195400		91800	2	1.82E+06	**4.70E+06**	1.10E+06	1.82E+06	12	91800	
January	24287200										
	Year's Total (well) =		1824900				Year's Total non-watering use =			846800	
Pumping Rate (gpm): 80 gpm (Pump design flow)											
Flow Rate Meter with: Totalizer											

			Training Center - Lawn Watering - Landscaping Irrigation Permit #96-5042								
2004	Meter Reading		Months Gallons	Avg. gpm	Total to date for Year	Well Annual Limit = 4.7E6 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average			
January	1237300		0	0	0.00E+00	**4.70E+06**	0.00E+00	0.00E+00	1		
February	1237300		0	0	0.00E+00	**4.70E+06**	0.00E+00	0.00E+00	2		
March	1237300		0	0	0.00E+00	**4.70E+06**	0.00E+00	0.00E+00	3		
April	1237300		57300	1	5.73E+04	**4.70E+06**	6.88E+05	1.72E+05	4		
May	1294600		197600	4	2.55E+05	**4.70E+06**	2.37E+06	6.12E+05	5		
June	1492200		210800	5	4.66E+05	**4.70E+06**	2.53E+06	9.31E+05	6		
July	1703000		108900	2	5.75E+05	**4.70E+06**	1.31E+06	9.85E+05	7		
August	1811900		157700	4	7.32E+05	**4.70E+06**	1.89E+06	1.10E+06	8		
September	1969600		140900	3	8.73E+05	**4.70E+06**	1.69E+06	1.16E+06	9		
October	2110500		104900	2	9.78E+05	**4.70E+06**	1.26E+06	1.17E+06	10		
November	2215400		0	0	9.78E+05	**4.70E+06**	0.00E+00	1.07E+06	11		
December	2215400		0	0	9.78E+05	**4.70E+06**	0.00E+00	9.78E+05	12		
January	2215400										
	Year's Total =		978100								
Pumping Rate (gpm): 80 gpm (Pump design flow)											
Flow Rate Meter with: Totalizer											

STD

690171
2005

2005 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **690171** Installation: **121**

Use: **NUCLEAR POWER PLANT**
Source Type: **GROUND WATER**

Well Unique Number: 256120
Twp: **113** Rng: **15** Sec: **5** Qtr: **ACDA**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND WELLS
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 300 (Pump design flow)

January	335,600	July	164,700
February	3,693,000	August	2,042,200
March	4,422,700	September	647600
April	1,041,000	October	181,400
May	3,709,500	November	1,092,500
June	2,534,200	December	969,000
		TOTAL	20,833,400

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE _____ DATE 1/30/06 PHONE (651) 388-1121 X4981

STD

690171
2005

2005 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **690171** Installation: **122**

Use: **NUCLEAR POWER PLANT**
Source Type: **GROUND WATER**

Well Unique Number: 256121
Twp: **113** Rng: **15** Sec: **5** Qtr: **ACDD**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND WELLS
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 300 (Pump design flow)

January	2,164,600	July	1,638,900
February	1,576,300	August	1,057,400
March	319,800	September	1,717,400
April	4,642,700	October	1,549,700
May	151,900	November	1,023,100
June	2,158,400	December	1,933,400
		TOTAL	19,933,600

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE _____ DATE 1/30/06 PHONE (651) 388-1121 X4981

STD

690171
2005

2005 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **690171** Use: **226** Permit Volume (MG/Y): **50.0** Installations: **2** County: **25**

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 40,767,000 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: 40.8 million gallons

3. If the amount on line 2 is less than 50 million gallons, skip to line 5. Otherwise, find the fee rate on the table below and enter it here. $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE
Less than 50 million gallons	Minimum permit fee $101
	FEE RATE (per million gallons)
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. For Example:
   75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee
   $ _____

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ 250,000 (355)

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____ (354)

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2005** water appropriation fee due. Return this fee with the water use reports and any additional information required. **Make checks payable to "MN DNR Waters", and mail forms and fees to:** **Minnesota DNR - OMB**
   500 Lafayette Rd Box 10
   St Paul, MN 55155

   $ 250,000

   Check Amt: 250,000
   Check # 439499

If you have questions please call (651) 259-5678 24 hours
This report and fee are due by February 15th

STD

690172
2005

2005 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **690172** Installation: **1**

Use: **NUCLEAR POWER PLANT**
Source Type: **STREAM/RIVER**
Source Name: **MISSISSIPPI**

Twp: **113** Rng: **15** Sec: **5** Qtr: **ADD**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND RIVER
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-388-1121**

A. If no water was withdrawn this year indicate the reason.
____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 552867 (Highest monthly average)

January	14,969,000,000	July	24,572,000,000
February	11,823,000,000	August	24,680,000,000
March	16,057,000,000	September	22,938,000,000
April	12,527,000,000	October	23,852,000,000
May	6,040,000,000	November	20,509,000,000
June	12,406,000,000	December	17,277,000,000
		TOTAL	207,650,000,000

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
____ 2. Flow Rate Meter with: ____ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
X 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE _____ DATE 1/30/06 PHONE (651) 388-1121
X4981

STD

690172
2005

2005 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **690172** Use: **226** Permit Volume (MG/Y): **235000.0** Installations: **1** County: **25**

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 207,650,000,000 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: 207,650 million gallons

3. If the amount on line 2 is less than 50 million gallons, skip to line 5. Otherwise, find the fee rate on the table below and enter it here. $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE
Less than 50 million gallons	Minimum permit fee $101
	FEE RATE (per million gallons)
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. For Example:
   75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee
   $ _____

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ 250,000 (355)

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____ (354)

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2005** water appropriation fee due. Return this fee with the water use reports and any additional information required. **Make checks payable to "MN DNR Waters", and mail forms and fees to:** $ 250,000

   Minnesota DNR - OMB
   500 Lafayette Rd Box 10
   St Paul, MN 55155

   Check Amt: 250,000
   Check # 439499

If you have questions please call (651) 259-5678 24 hours
This report and fee are due by February 15th

STD

785153
2005

2005 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **785153** Installation: **2**

Use: **NUCLEAR POWER PLANT**
Source Type: **GROUND WATER**
Source Name: **QWTA**

Well Unique Number: 611076
Twp: **113** Rng: **15** Sec: **5** Qtr: **DAAD**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND CT WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 40 (Pump flow design)

January	0	July	837,960
February	0	August	1,160,000
March	101,040	September	1,087,690
April	829,060	October	553,940
May	1,108,180	November	0
June	1,152,340	December	0
		TOTAL	6,830,210

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE ____ DATE 1/30/06 PHONE (651) 388-1121
X498

STD

785153
2005

2005 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **785153** Use: **226** Permit Volume (MG/Y): **15.0** Installations: **1** County: **25**

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 6,830,210 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: 6.8 million gallons

3. If the amount on line 2 is less than 50 million gallons, skip to line 5. Otherwise, find the fee rate on the table below and enter it here. $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE
Less than 50 million gallons	Minimum permit fee $101
	FEE RATE (per million gallons)
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. For Example:
   75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee
   $ _____

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ 250,000 (355)

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____ (354)

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2005** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 250,000
   Make checks payable to "MN DNR Waters", and mail forms and fees to: **Minnesota DNR - OMB**
   500 Lafayette Rd Box 10
   St Paul, MN 55155

   Check Amt: 250,000
   Check # 439499

If you have questions please call (651) 259-5678 24 hours
This report and fee are due by February 15th

STD

865114
2005

2005 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **865114** Installation: **1**

Use: **POWER GENERATION**
Source Type: **GROUND WATER**
Source Name: **QWTA**

Well Unique Number: 402599
Twp: **113** Rng: **15** Sec: **5** Qtr: **ADDC**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND BEARING WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 50 (Pump Hydrodesign)

*January	1,379,000	July	659,700
*February	1,379,000	August	1,044,900
*March	1,379,000	September	1,033,900
April	473,065	October	851,500
May	643,400	November	1,024,300
June	898,000	December	1,039,930
		TOTAL	12,055,695

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

* Flow totalizer bypassed on 10/18/04, estimate used through March 2005.

2nd meter placed into service on 12/20/05.

SIGNATURE [signature] DATE 1/30/06 PHONE (651) 388-1121

X4981

STD

865114
2005

2005 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **865114** Use: **229** Permit Volume (MG/Y): **20.0** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 12,055,695 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: 12.0 million gallons

3. If the amount on line 2 is less than 50 million gallons, skip to line 5. Otherwise, find the fee rate on the table below and enter it here. $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE
Less than 50 million gallons	Minimum permit fee $101
	FEE RATE (per million gallons)
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. $ _____
   For Example: 75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

For a municipality that furnishes electric service and cogenerates steam for home heating $10,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ 250,000 (355)

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____ (354)

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2005** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 250,000
   Make checks payable to "MN DNR Waters", and mail forms and fees to: **Minnesota DNR - OMB**
   500 Lafayette Rd Box 10
   St Paul, MN 55155

Check Amt: 250,000
Check # 439499

If you have questions please call (651) 259-5678 24 hours
This report and fee are due by February 15th

OTS
MULTI

965042
2005

2005 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **965042** Installation: **1**

Primary Use: **COMMERCIAL & INSTITUTIONAL**
Source Type: **GROUND WATER**
Source Name: **QBUA**

Well Unique Number: 256074
Twp: **113** Rng: **15** Sec: **5** Qtr: **CAAD**
Goodhue County
Please correct address if needed:

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND TRAINING CENTER WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Phone: **612-330-6625**

A. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 80 (Pump Design Flow)

Installation: 1 **First Use: 213** **COMMERCIAL & INSTITUTIONAL**

January	74,500	July	71,500
February	85,600	August	118,900
March	70,000	September	194,100
April	64,300	October	179,000
May	61,500	November	70,200
June	62,600	December	77,800

First Use TOTAL 1,128,000

B. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
_X_ 2. Flow Rate Meter with: _X_ Totalizer or____ Hour meter
____ 3. Timing Device: ____Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE _____ DATE 1/30/06 PHONE (651) 388-1121 x4981

OTS
MULTI

965042
2005

2005 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **965042** Installation: **1**

1. List the number of **gallons** withdrawn for each use by month. Pumping Rate (gpm):_____

Installation: 1 **Second Use: 283 LANDSCAPING/ATHLETIC FIELD IRRIGATION**

January	0	July	173,000
February	0	August	269,000
March	0	September	249,600
April	0	October	64,600
May	0	November	0
June	62,000	December	0

Second Use TOTAL 818,200

SIGNATURE [signature] DATE 1/30/06 PHONE (651) 388-1121

X4981

OTS
MULTI

965042
2005

2005 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927

Permit Volume (MG/Y): **4.7** Number of installations: **1** Permit: **965042** County: **25**

1. Fill out the table below using one row for each of your permitted use codes.

Fee Rate: See the Fee Calculation Table Key on the next page for instructions.

Non Once-Through System Use Rate Table A based on column D

A Use Code	B Total Pumped per use (gallons)	C Total Pumped per use (million gallons)	D Total Pumped Sum of column C
213	1,128,000	1.1	1.9
283	818,200	0.8	

Fee Rate (from Table A)	$	/million gallons
Use Fee (Total Pumped x Rate)	$	

Once-Through System Use Rate Table B

A Use Code	B Total Pumped (gallons)	C Total Pumped (million gallons)

Fee Rate	
Use Fee (Total Pumped x Rate)	$

2. Sum the use fees for non once-through and once-through pumping: $ _____

3. If the amount on line 2 is less than $101, enter $101 on this line, otherwise enter the amount from line 2 here: $ _____ (355)

4. Enter the amount of Summer Surcharge if applicable. $ 8.00 (355)

5. Complete the Data Verification Form. If a fee is required for an amendment or transfer, enter the amount here: $ _____ (354)

6. **Add lines 3, 4 and 5 and enter the amount on this line.** This is your **2005** water appropriation fee due. Return this fee with the water use reports and all required additional information. $ _____

Make checks payable to "MN DNR Waters", and mail forms and fees to:
Minnesota DNR - OMB
500 Lafayette Rd Box 10
St Paul, MN 55155

Check Amt: 8.00
Check # 444041

If you have questions please call (651) 259-5678 24 hours
This report and fee are due by February 15th

965042
2005

SUMMER SURCHARGE

A surcharge of $20 per million gallons will be applied to the volume of water used in each of the months of June, July, and August that exceeds the volume of water used in January. The summer surcharge applies to **municipal water use, irrigation of golf courses and landscape irrigation.** This surcharge is in addition to the regular fee based on the yearly total volume.

For the months listed, total the individual installation volumes for the month in millions of gallons (MG).

If the surcharge volume is negative, report zero for that month. Please round volumes to one decimal place.

June Total (MG)	- January Total (MG)	= June Surcharge Volume (MG)
0.1	0.1	0

July Total (MG)	- January Total (MG)	= July Surcharge Volume (MG)
0.2	0.1	0.1

August Total (MG)	- January Total (MG)	= August Surcharge Volume (MG)
0.4	0.1	0.3

Total Surcharge Volume (MG) 0.4 **x $20 =** **Total Surcharge** $8.00
(Sum of monthly surcharge volumes)

report this fee on the Summer Surcharge line of the Fee Calculation Worksheet for this permit

OTS
MULTI

965042
2005

2005 PERMIT DATA VERIFICATION FORM

Enter the total volume of water pumped from the Fee Calculation Worksheet_____ million gallons

If this number is greater than **4.7** million gallons an amendment is required along with an after the fact fee of $300. Enter this amount on line 4 of the Fee Calculation Worksheet and enclose applicable items listed below with your water use report and fees.

If no permit changes are required, you do not need to submit this page.

1. **Amendment:** To change the number of permitted installations, pumping rate, or permitted volume, enter $150 (or $300 as specified above) on line 4 of the Fee Calculation Worksheet and enclose the applicable items listed below with your report and fees.

   a. A written amendment request describing changes needed to the existing permit.
   b. A statement justifying requests to change permit limits.
   c. A site map showing the location of all wells or pumps and all lands owned/leased.
   d. A copy of the water well record for each new well (supplied by your well driller).
   e. Include the number of well/pump stations (installations), their pumping capacity, and the status of each installation (active, standby, abandoned).

2. **Transfer:** If you no longer own or rent the property, or if the property will change ownership in the coming year, fill in the new information below.

   New owner name: _____ Phone: _____

   New address: _____

   _____

   Date of land sale or transfer: _____

   The following items are required from the new owner to transfer the permit:
   A. Proof of ownership or control (copy of deed, tax statement, lease agreement, etc.)
   B. $150 transfer fee (see below for exemptions).

3. **Termination:** If you want to terminate the permit, please indicate why it is no longer needed.
   Note: the 2005 water use report and fee are still required.

Fee Exemptions Minnesota Rules 6115.0120

1. A change in mailing address or authorized agent when land ownership has not changed.
2. A transfer of a permit within the immediate family.
3. A change in pump location on surface water sources for the same operation.
4. A replacement well completed at the same depth in the same aquifer.
5. A decrease in the permitted pumping rate, amount of water authorized, or irrigated acreage.

SIGNATURE_____ DATE _____ PHONE (____)_____

OTS
MULTI

FEE CALCULATION TABLE KEY

A. Use Code - The code corresponding to the purpose for which the water was appropriated. Fill out one row for each of your permitted water uses.

B. Total Pumped (gallons) - The sum of all appropriations corresponding to the use code in column A. Add the totals from each section of the installation worksheets corresponding to the use code in column A.

C. Total Pumped (million gallons) - Divide the amount in column B by one million (1,000,000). Round to the third decimal place. *For example: 10,745,643 gallons would become 10.746 million gallons.*

D. Combined Water Used - Combine all non once-through system pumping to determine the volume of water to be charged at the Table A rate.

Use Fee - Non Once-through Systems - Multiply the total volume in column D by the fee rate.
Once-through Systems - Multiply the volume in column C by the fee rate.

Fee Rate Table A. - Determine fee based on the combined volume in column D.

VOLUME PUMPED (from line 2)	FEE RATE (per million gallons)
Up to 50 million gallons	$2.00
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

Fee Rate Table B. - The reporting status for which you qualify is marked with an "X".
If you change your reporting status, you must include your certificate of exemptions.

	Reporting Status	Fee Rate ($ per million gallons)
	Non-profit corporations and school districts.	$150 per million gallons
X	All other once through heating or cooling systems.	$300 per million gallons

STD

1969-0171
2006

2006 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: 1969-0171 Installation: 121

Use: NUCLEAR POWER PLANT
Source Type: GROUND WATER

Well Unique Number: 256120
Twp: 113 Rng: 15 Sec: 5 Qtr: ACDA
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND WELLS
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: 612-330-6625

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify)
____ 6. Water received from an alternate source (specify)

B. List the number of gallons withdrawn in each month. Pumping Rate (gpm): 300 (pmp design flow)

January	3,828,800	July	806,100
February	3,857,800	August	873,200
March	1,257,100	September	1,124,400
April	1,436,000	October	1,805,400
May	1,157,300	November	1,078,300
June	994,500	December	1,120,800
		TOTAL	19,359,400

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 2-2-07 PHONE (651) 388-1121 ext 4958

STD

1969-0171
2006

2006 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **1969-0171** Installation: **122**

Use: **NUCLEAR POWER PLANT**
Source Type: **GROUND WATER**

Well Unique Number: 256121
Twp: **113** Rng: **15** Sec: **5** Qtr: **ACDD**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND WELLS
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 300 (pump design flow)

January	468,300	July	1,241,600
February	527,800	August	1,428,800
March	1,067,600	September	976,900
April	642,700	October	255,500
May	3,042,000	November	1,700,800
June	2,791,100	December	2,134,000
		TOTAL	16,277,100

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 2-2-07 PHONE (651) 388-1121 ext 4958

STD

1969-0171
2006

2006 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **1969-0171** Use: **226** Permit Volume (MG/Y): **50.0** Installations: **2** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 35,636,500 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: 35.6 million gallons

3. If the amount on line 2 is less than 50 million gallons, skip to line 5. Otherwise, find the fee rate on the table below and enter it here. $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE
Less than 50 million gallons	Minimum permit fee $101
	FEE RATE (per million gallons)
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. $ _____
   For Example: 75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ 250,000.00 (355)

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ — (354)

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2006** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 250,000.00 due

Make checks payable to "MN DNR Waters" paid

Mail forms and fees to: Minnesota DNR - OMB
500 Lafayette Rd Box 10
St Paul, MN 55155

Check Amt $ 250,000
Check # 501109

If you have questions please call (651) 259-5678 24 hours
This report and fee are due by February 15th

STD

1969-0172
2006

2006 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **1969-0172** Installation: **1**

Use: **NUCLEAR POWER PLANT**
Source Type: **STREAM/RIVER**
Source Name: **MISSISSIPPI RIVER**

Twp: **113** Rng: **15** Sec: **5** Qtr: **ADD**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND RIVER
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-388-1121**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 554,368 (highest monthly ave.)

January	15,896,000,000	July	24,637,000,000
February	15,756,000,000	August	24,747,000,000
March	17,937,000,000	September	23,302,000,000
April	11,410,000,000	October	23,637,000,000
May	6,587,000,000	November	14,610,000,000
June	11,910,000,000	December	~~11,875,000,000~~ 12,712,000,000 gmt 2/2/07
			203,141,000,000 gmt 2/2/07
		TOTAL	~~202,304,000,000~~

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
____ 2. Flow Rate Meter with: ____ Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
X 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 2-2-07 PHONE (651) 388-1121 ext 4958

STD

1969-0172
2006

2006 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **1969-0172** Use: **226** Permit Volume (MG/Y): **235000.0** Installations: **1** County: **25**

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 203,141,000,000 gmt 2/2/07 ~~202,304,000,000~~ gallons
2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: 203,141 gmt 2/2/07 ~~202,304~~ million gallons
3. If the amount on line 2 is less than 50 million gallons, skip to line 5. Otherwise, find the fee rate on the table below and enter it here. $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE
Less than 50 million gallons	Minimum permit fee $101
	FEE RATE (per million gallons)
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. $ _____
   For Example: 75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ 250,000 (355)
6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____ (354)
7. **Add lines 5 and 6.** Enter the total on this line. This is the **2006** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 250,000 due

Make checks payable to "MN DNR Waters" paid
Mail forms and fees to: Minnesota DNR - OMB
500 Lafayette Rd Box 10
St Paul, MN 55155

Check Amt $ 250,000
Check # 501109

If you have questions please call (651) 259-5678 24 hours
This report and fee are due by February 15th

STD

1978-5153
2006

2006 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **1978-5153** Installation: **2**

Use: **NUCLEAR POWER PLANT**
Source Type: **GROUND WATER**
Source Name: **QWTA**

Well Unique Number: 611076
Twp: **113** Rng: **15** Sec: **5** Qtr: **DAAD**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND CT WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 40gpm (pump design flow)

January	0	July	906,640
February	0	August	1,085,610
March	183,240	September	1,069,990
April	489,480	October	621,430
May	992,650	November	0
June	845,680	December	0
		TOTAL	6,194,720

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE [signature] DATE 2-2-07 PHONE (651) 388-1121 ext 4958

STD

1978-5153
2006

2006 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **1978-5153** Use: **226** Permit Volume (MG/Y): **15.0** Installations: **1** County: **25**

---

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 6,194,720 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: 6.2 million gallons

3. If the amount on line 2 is less than 50 million gallons, skip to line 5. Otherwise, find the fee rate on the table below and enter it here. $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE
Less than 50 million gallons	Minimum permit fee $101
	FEE RATE (per million gallons)
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. 75.2 million gallons $ _____
   For Example: x 3.00 dollars per million gallons
   $225.60 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ 250,000 (355)

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____ (354)

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2006** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 250,000 due

Make checks payable to "MN DNR Waters" paid
Mail forms and fees to: Minnesota DNR - OMB
500 Lafayette Rd Box 10
St Paul, MN 55155

Check Amt $ 250,000
Check # 501109

If you have questions please call (651) 259-5678 24 hours
This report and fee are due by February 15th

STD

1986-5114
2006

2006 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **1986-5114** Installation: **1**

Use: **POWER GENERATION**
Source Type: **GROUND WATER**
Source Name: **QWTA**

Well Unique Number: 402599
Twp: **113** Rng: **15** Sec: **5** Qtr: **ADDC**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND BEARING WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. If no water was withdrawn this year indicate the reason.

____ 1. CRP/set aside ____ 2. System removed ____ 3. Water not required
____ 4. Permit suspended ____ 5. Other (specify) ____
____ 6. Water received from an alternate source (specify) ____

B. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 50gpm (pump design flow)

January	1,387,170	July	1,402,900
February	1,400,500	August	1,458,200
March	1,430,400	September	849,400
April	1,316,600	October	1,295,500
May	1,494,900	November	940,600
June	1,379,100	December	466,700
		TOTAL	14,821,970

C. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer or ____ Hour meter
____ 3. Timing Device: ____ Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

* Flow meter not working properly for the first 8 months of 2006. 110,000 gallons used as estimate for upper meter. Conservative estimate higher than any actual reading from 2005.

SIGNATURE [signature] DATE 2-2-07 PHONE (651) 388-1121 ext 4958

STD

1986-5114
2006

2006 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927
Permit: **1986-5114** Use: **229** Permit Volume (MG/Y): **20.0** Installations: **1** County: **25**

1. Enter the total volume of water pumped from all installations of this permit. If this amount is 0, skip to line 5 and enter $101. 14,821,970 gallons

2. Divide line 1 by one million (1,000,000), round to the nearest tenth (one decimal place), and enter here: 14.8 million gallons

3. If the amount on line 2 is less than 50 million gallons, skip to line 5. Otherwise, find the fee rate on the table below and enter it here. $ _____ per million gallons

VOLUME PUMPED (from line 2)	FEE
Less than 50 million gallons	Minimum permit fee $101
	FEE RATE (per million gallons)
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
Over 500 million gallons	$7.50

4. Multiply Line 2 by Line 3. $ _____
   For Example: 75.2 million gallons
   x 3.00 dollars per million gallons
   $225.60 fee

Classification	Maximum Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000

Classification	Maximum Fee
entity with more than 5 permits	$250,000
city of the first class	$250,000

For a municipality that furnishes electric service and cogenerates steam for home heating $10,000

5. FEE DETERMINATION:
   a) If the amount on line 2 is less than or equal to 50 million gallons, enter the minimum fee of $101 on this line.
   b) If the amount on line 4 is greater than the maximum fee from the table above, enter the maximum fee from the table on this line.
   c) Otherwise, enter the amount from line 4. $ 250,000 (355)

6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line: $ _____ (354)

7. **Add lines 5 and 6.** Enter the total on this line. This is the **2006** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 250,000 due
   Make checks payable to "MN DNR Waters" paid
   Mail forms and fees to: Minnesota DNR - OMB
   500 Lafayette Rd Box 10
   St Paul, MN 55155

   Check Amt $ 250,000
   Check # 501109

If you have questions please call (651) 259-5678 24 hours
This report and fee are due by February 15th

			Screenhouse Cooling Water Permit #1986-5114				Pump Rate = 50gpm design flow					
2006	Beginning of Month Upper Meter Reading	Beginning of Month Lower Meter Reading	Months Gallons combined for both meters	Avg. gpm Limit = 50 gpm	Total to date for Year	Annual Limit = 2E7 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average		Months Gallons for Upper Meter	Months Gallons for Lower Meter	Upper +low
January	26543500	50530	1.39E+06	31	1.39E+06	**2.00E+07**	1.66E+07	1.66E+07	1	1100000	287170	1,387,170
February	26543500	337700	1.40E+06	35	2.79E+06	**2.00E+07**	1.68E+07	1.67E+07	2	1100000	300500	1,400,500
March	26543500	638200	1.43E+06	32	4.22E+06	**2.00E+07**	1.72E+07	1.69E+07	3	1100000	330400	1,430,400
April	26543500	968600	1.32E+06	30	5.53E+06	**2.00E+07**	1.58E+07	1.66E+07	4	1100000	216600	1,316,600
May	12820800	1185200	1.49E+06	33	7.03E+06	**2.00E+07**	1.79E+07	1.69E+07	5	1100000	394900	1,494,900
June	13324100	1580100	1.38E+06	32	8.41E+06	**2.00E+07**	1.65E+07	1.68E+07	6	1100000	279100	1,379,100
July	13324100	1859200	1.40E+06	31	9.81E+06	**2.00E+07**	1.68E+07	1.68E+07	7	1100000	302900	1,402,900
August 8/31	13324170	2162100	1.46E+06	33	1.13E+07	**2.00E+07**	1.75E+07	1.69E+07	8	1100000	358200	1,458,200
September	226600	2520300	8.49E+05	20	1.21E+07	**2.00E+07**	1.02E+07	1.62E+07	9	586500	262900	849,400
October	813100	2783200	1.30E+06	29	1.34E+07	**2.00E+07**	1.55E+07	1.61E+07	10	932000	363500	1,295,500
November	1745100	3146700	9.41E+05	22	1.44E+07	**2.00E+07**	1.13E+07	1.57E+07	11	623300	317300	940,600
December	2368400	3464000	4.67E+05	10	1.48E+07	**2.00E+07**	5.60E+06	1.48E+07	12	456800	9900	466,700
January	2825200	3473900	0.00E+00									
								Year's Total =		11398600	3423370	
							Sum of upper & lower meters =			14821970		
Pumping Rate (gpm): 50 gpm (Pump design flow)												
Flow Rate Meter with: Totalizer												

Screenhouse Cooling Water Permit #1986-5114 — **Pump Rate = 50gpm design flow**

2006	Beginning of Month Upper Meter Reading	Beginning of Month Lower Meter Reading	Months Gallons combined for both meters	Avg. gpm Limit = 50 gpm	Total to date for Year	Annual Limit = 2E7 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Month Average		Months Gallons for Upper Meter	Months Gallons for Lower Meter	Upper +low
January	26543500	50530	1.39E+06	31	1.39E+06	2.00E+07	1.66E+07	1.66E+07	1	1100000	287170	1,387,170
February	26543500	337700	1.40E+06	35	2.79E+06	2.00E+07	1.68E+07	1.67E+07	2	1100000	300500	1,400,500
March	26543500	638200	1.43E+06	32	4.22E+06	2.00E+07	1.72E+07	1.69E+07	3	1100000	330400	1,430,400
April	26543500	968600	1.31E+06	30	5.53E+06	2.00E+07	1.58E+07	1.66E+07	4	1100000	216600	1,316,600
May	12820800	1185200							5	1100000	394900	1,494,900
June	13324100	1580100							6	1100000	279100	1,379,100
July	13324100	1859200							7	1100000	302900	1,402,900
August 8/31	13324170	2162100							8	1100000	358200	1,458,200
September	226600	2520300	8.49E+05			7	1.02E+07	1.62E+07	9	586500	262900	849,400
October	813100	2783200	1.30E+06			7	1.55E+07	1.61E+07	10	932000	363500	1,295,500
November	1745100	3146700	9.41E+05			7	1.13E+07	1.57E+07	11	623300	317300	940,600
December	2368400	3464000	4.67E+05			7	5.60E+06	1.48E+07	12	456800	9900	466,700
January	2825200	3473900	0.00E+00									
								Year's Total =		11398600	3423370	
							Sum of upper & lower meters =			14821970		

Pumping Rate (gpm): 50 gpm (Pump design flow)

Flow Rate Meter with: Totalizer

Jeffrey J Connors:
Flow meter was replaced in August.

Jeffrey J Connors:
Flow Meter was not working properly for the first 7 months of 2006. 1100000 gallons was used as an estimate for these months. *This estimate is conservative* based on it being higher than any actual reading from 2005 (not counting the estimated from 2005) and the fact that the well water usage flow is now being split between two flow meters so usage recorded on this flow meter will be lower than previous years.

Jeffrey J Connors:
This value will need to be an estimate of the first 21 days of the month plus actuals for the last 10 days following the replacement of the meter.

OTS
MULTI

1996-5042
2006

2006 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **1996-5042** Installation: **1**

Primary Use: **COMMERCIAL & INSTITUTIONAL**
Source Type: **GROUND WATER**
Source Name: **QBUA**

Well Unique Number: 256074
Twp: **113** Rng: **15** Sec: **5** Qtr: **CAAD**
Goodhue County

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND TRAINING CENTER WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

A. List the number of **gallons** withdrawn in each month. Pumping Rate (gpm): 8gpm (Pump Design Flow)

Installation: 1 **First Use: 213** **COMMERCIAL & INSTITUTIONAL**

January	69,500	July	112,400
February	83,200	August	126,600
March	98,000	September	81,700
April	63,600	October	68,400
May	23,600	November	57,700
June	131,200	December	83,800

First Use TOTAL 999,700

B. Affidavit of compliance - Measurement method (check one)

____ 1. Flow Meter
_x_ 2. Flow Rate Meter with: _x_ Totalizer or ____ Hour meter
____ 3. Timing Device: ____Hour meter or ____ Electric meter x gpm
____ 4. Alternate method: If not already approved, enclose request for approval.
____ 5. Estimated: An approved measuring device or method is required. (describe below)

SIGNATURE _____ DATE 2-2-07 PHONE (651) 388-1121
ext 4958

OTS
MULTI

1996-5042
2006

2006 DNR - ANNUAL REPORT OF WATER USE
Installation Worksheet

Permit: **1996-5042** Installation: **1**

1. List the number of **gallons** withdrawn for each use by month. Pumping Rate (gpm): 20gpm (Pump Design Flow)

Installation: 1 **Second Use: 283 LANDSCAPING/ATHLETIC FIELD IRRIGATION**

January	-	July	356200
February		August	275300
March		September	
April		October	
May	34700	November	
June	263600	December	

Second Use TOTAL 929800

SIGNATURE [signature] DATE 2-2-07 PHONE (651) 388-1121 ext 4958

OTS
MULTI

1996-5042
2006

2006 DNR - FEE CALCULATION WORKSHEET

NSP CO DBA XCEL ENERGY, MINNEAPOLIS, MN 55401-1927

Permit Volume (MG/Y): **4.7** Number of installations: **1** Permit: **1996-5042** County: **25**

1. Fill out the table below using one row for each of your permitted use codes.

Fee Rate: See the Fee Calculation Table Key on the next page for instructions.

Non Once-Through System Use Rate Table A based on column D

A Use Code	B Total Pumped per use (gallons)	C Total Pumped per use (million gallons)	D Total Pumped Sum of column C
213	999,700	1.0	1.9
283	929,800	0.9	

Fee Rate (from Table A)	$	/million gallons
Use Fee (Total Pumped x Rate)	$	

Once-Through System Use Rate Table B

A Use Code	B Total Pumped (gallons)	C Total Pumped (million gallons)

Fee Rate	
Use Fee (Total Pumped x Rate)	$

2. Sum the use fees for non once-through and once-through pumping: $ _____

3. If the amount on line 2 is less than $101, enter $101 on this line, otherwise enter the amount from line 2 here: $ _____ (355)

4. Enter the amount of Summer Surcharge if applicable. $ _____ (355)

5. Complete the Data Verification Form. If a fee is required for an amendment or transfer, enter the amount here: $ _____ (354)

6. **Add lines 3, 4 and 5 and enter the amount on this line.** This is your **2006** water appropriation fee due. Return this fee with the water use reports and all required additional information. $ _____ due

Make checks payable to "MN DNR Waters"
Mail forms and fees to: Minnesota DNR - OMB
500 Lafayette Rd Box 10
St Paul, MN 55155

paid

Check Amt $
Check #

If you have questions please call (651) 259-5678 24 hours
This report and fee are due by February 15th

2006

SUMMER SURCHARGE

A surcharge of $20 per million gallons will be applied to the volume of water used in each of the months of June, July, and August that exceeds the volume of water used in January. The summer surcharge applies to municipal water use, irrigation of golf courses and landscape irrigation. This surcharge is in addition to the regular fee based on the yearly total volume.

For the months listed, total the individual installation volumes for the month in gallons. If the surcharge volume is negative, report zero for that month.

June Total	-	January Total	=	June Surcharge Volume
0.4 394,800		0.1 69,500		0.3 325,300
July Total	-	**January Total**	=	**July Surcharge Volume**
0.5 468,600		0.1 69,500		0.4 399,100
August Total	-	**January Total**	=	**August Surcharge Volume**
0.4 401,900		0.1 69,500		0.3 332,400

Total Surcharge Volume
(Sum of monthly surcharge volumes) 1.0
1,056,800

report this fee on line 6 of the Fee Calculation Worksheet
Total Surcharge

divide by 1 million to show in millions of gallons to one decimal place 1.1 x $20 = $ 22

The fee applies when the summer surcharge volume is above 0.1 million gallons on the last line

STD

1969-0171
2007

2007 MN DNR - Annual Report of Water Use
Installation Worksheet

Permit: **1969-0171** Installation: **121**

Permittee: **NSP CO DBA XCEL ENERGY**

Use: **Nuclear Power Plant**
Source Type: **Ground Water**
Source Name:

Well Unique Number: 256120
Twp: **113** Rng: **15** Sec: **5** Qtr: **ACDA**
Goodhue County

A. If no water was withdrawn this year, indicate the reason.
___ 1. Well Sealed ___ 2. System Removed
___ 3. Water received from an alternate source, specify:
___ 4. Other, specify:

B. List the number of **gallons** withdrawn in each month of 2007. Pumping Rate (GPM): 300

January	911,400	July	1,102,900
February	2,329,599	August	1,166,290
March	519,701	September	488,210
April	1,160,100	October	1,467,000
May	3,370,000	November	601,900
June	674,200	December	2,385,300
		Total	16,176,600

C. Measurement method (indicate one)

___ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer *or* ___ Hour meter
___ 3. Timing Device with: ___ Hour Meter *or* ___ Electric meter x gpm
___ 4. Alternate method: If not already approved, enclose request for approval
___ 5. Estimated: An approved measuring device or method is required (describe below)

Signature [signature] Date 1/28/08 Phone 651-388-1121
Ext 4958

STD

1969-0171
2007

2007 MN DNR - Annual Report of Water Use
Installation Worksheet

Permit: **1969-0171** Installation: **122**

Permittee: **NSP CO DBA XCEL ENERGY**

Use: **Nuclear Power Plant**
Source Type: **Ground Water**
Source Name:

Well Unique Number: 256121
Twp: **113** Rng: **15** Sec: **5** Qtr: **ACDD**
Goodhue County

A. If no water was withdrawn this year, indicate the reason.
___ 1. Well Sealed ___ 2. System Removed
___ 3. Water received from an alternate source, specify:
___ 4. Other, specify:

B. List the number of **gallons** withdrawn in each month of 2007. Pumping Rate (GPM): 300

January	778,600	July	1,486,200
February	46,500	August	328,450
March	852,200	September	814,350
April	1,528,100	October	2,196,500
May	2,281,900	November	1,268,100
June	1,518,800	December	559,200
		Total	13,658,900

C. Measurement method (indicate one)

___ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer *or* ___ Hour meter
___ 3. Timing Device with: ___ Hour Meter *or* ___ Electric meter x gpm
___ 4. Alternate method: If not already approved, enclose request for approval
___ 5. Estimated: An approved measuring device or method is required (describe below)

Signature [signature] Date 1/28/08 Phone 651-388-1121
Ext 4958

STD

1969-0171
2007

2007 MN DNR - Annual Report of Water Use
Fee Calculation Worksheet

Permit: **1969-0171** Permitted Volume (MG/Y): **50.0** Permitted Installations: **2**
Use: **Nuclear Power Plant**

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND WELLS
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

1. Enter the total volume of water from all installations of this permit. 29,835,500 gallons
2. Divide line 1 by one million, round to the nearest decimal place. 29.8 million gallons
3. If the amount on line 2 is less than 50 million gallons, skip to line 5. If 50 million gallons or greater, enter the **Fee Rate** from the table. $ – per million gallons

Volume Pumped (from line 2)	Fee
Less than 50 million gallons	Minimum fee $101
	Fee Rate
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50 per
150 to 200 million gallons	$4.00 million
200 to 250 million gallons	$4.50 gallons
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
over 500 million gallons	$7.50

Maximum Fee

Classification	Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000
entity with more than 5 permits	$250,000
city of the first class	$250,000

4. Multiply line 2 by line 3 (when volume is 50 MG or greater). $ –
5. Fee Determination $ 250,000 (355)
   a) If the amount on line 2 is less than 50 million gallons, enter the minimum permit fee of $101.
   b) If the amount on line 4 is greater than the maximum fee, enter the applicable maximum fee.
   c) Otherwise, enter the amount from line 4.
6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line. $ – (354)
7. **Add lines 5 and 6.** Enter the total on this line. This is the **2007** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 250,000 due

Make checks payable to "MN DNR Waters"
Mail forms and fees to: Minnesota DNR - OMB
500 Lafayette Rd Box 10
St Paul MN 55155

paid
Check Amt $ 250,000
Check # 550205

This report and fee are due by February 15th. Please call (651)259-5678 with questions.

STD

1969-0172
2007

2007 MN DNR - Annual Report of Water Use
Installation Worksheet

Permit: **1969-0172** Installation: **1**

Permittee: **NSP CO DBA XCEL ENERGY**

Use: **Nuclear Power Plant**
Source Type: **Stream/River**
Source Name: **MISSISSIPPI RIVER**

Twp: **113** Rng: **15** Sec: **5** Qtr: **ADD**
Goodhue County

A. If no water was withdrawn this year, indicate the reason.
___ 1. Well Sealed ___ 2. System Removed
___ 3. Water received from an alternate source, specify:
___ 4. Other, specify:

B. List the number of **gallons** withdrawn in each month of 2007.

Pumping Rate (GPM): 538,911 (highest monthly average)

January	18,012,000,000	July	24,057,000,000
February	16,330,000,000	August	23,924,000,000
March	16,664,000,000	September	22,310,000,000
April	10,901,000,000	October	23,866,000,000
May	6,756,000,000	November	21,210,000,000
June	12,599,000,000	December	16,137,000,000
		Total	212,766,000,000

C. Measurement method (indicate one)

___ 1. Flow Meter
___ 2. Flow Rate Meter with: ___ Totalizer *or* ___ Hour meter
___ 3. Timing Device with: ___ Hour Meter *or* ___ Electric meter x gpm
X 4. Alternate method: If not already approved, enclose request for approval
___ 5. Estimated: An approved measuring device or method is required (describe below)

Signature Date 1/28/08 Phone 651-388-1121 Ext 4958

STD

1969-0172
2007

2007 MN DNR - Annual Report of Water Use
Fee Calculation Worksheet

Permit: **1969-0172** Permitted Volume (MG/Y): **235000.0** Permitted Installations: **1**
Use: **Nuclear Power Plant**

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND RIVER
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-388-1121**

1. Enter the total volume of water from all installations of this permit. 212,766,000,000 gallons
2. Divide line 1 by one million, round to the nearest decimal place. 212,766.0 million gallons
3. If the amount on line 2 is less than 50 million gallons, skip to line 5. If 50 million gallons or greater, enter the **Fee Rate** from the table. $ – per million gallons

Volume Pumped (from line 2)	Fee
Less than 50 million gallons	Minimum fee $101
	Fee Rate
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50 per
150 to 200 million gallons	$4.00 million
200 to 250 million gallons	$4.50 gallons
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
over 500 million gallons	$7.50

Maximum Fee

Classification	Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000
entity with more than 5 permits	$250,000
city of the first class	$250,000

4. Multiply line 2 by line 3 (when volume is 50 MG or greater). $ –
5. Fee Determination $ 250,000 (355)
   a) If the amount on line 2 is less than 50 million gallons, enter the minimum permit fee of $101.
   b) If the amount on line 4 is greater than the maximum fee, enter the applicable maximum fee.
   c) Otherwise, enter the amount from line 4.
6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line. $ – (354)
7. **Add lines 5 and 6.** Enter the total on this line. This is the **2007** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 250,000 due

Make checks payable to "MN DNR Waters"
Mail forms and fees to: Minnesota DNR - OMB
500 Lafayette Rd Box 10
St Paul MN 55155

paid

Check Amt $ 250,000
Check # 550205

This report and fee are due by February 15th. Please call (651)259-5678 with questions.

STD

1978-5153
2007

2007 MN DNR - Annual Report of Water Use
Installation Worksheet

Permit: **1978-5153** Installation: **2**

Permittee: **NSP CO DBA XCEL ENERGY**

Use: **Nuclear Power Plant**
Source Type: **Ground Water**
Source Name: **QWTA**

Well Unique Number: 611076
Twp: **113** Rng: **15** Sec: **5** Qtr: **DAAD**
Goodhue County

A. If no water was withdrawn this year, indicate the reason.
___ 1. Well Sealed ___ 2. System Removed
___ 3. Water received from an alternate source, specify:
___ 4. Other, specify:

B. List the number of **gallons** withdrawn in each month of 2007. Pumping Rate (GPM): 40

January	0	July	612,870
February	0	August	612,160
March	0	September	347,180
April	537,660	October	497,480
May	595,030	November	24,940
June	481,570	December	0
		Total	3,708,890

C. Measurement method (indicate one)

___ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer *or* ___ Hour meter
___ 3. Timing Device with: ___ Hour Meter *or* ___ Electric meter x gpm
___ 4. Alternate method: If not already approved, enclose request for approval
___ 5. Estimated: An approved measuring device or method is required (describe below)

Signature [signature] Date 1/29/08 Phone 651-388-1121 Ext 4958

STD

1978-5153
2007

2007 MN DNR - Annual Report of Water Use
Fee Calculation Worksheet

Permit: **1978-5153** Permitted Volume (MG/Y): **15.0** Permitted Installations: **1**
Use: **Nuclear Power Plant**

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND CT WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

1. Enter the total volume of water from all installations of this permit. 3,708,890 gallons
2. Divide line 1 by one million, round to the nearest decimal place. 3.7 million gallons
3. If the amount on line 2 is less than 50 million gallons, skip to line 5. If 50 million gallons or greater, enter the **Fee Rate** from the table. $ – per million gallons

Volume Pumped (from line 2)	Fee
Less than 50 million gallons	Minimum fee $101
	Fee Rate
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50 **per**
150 to 200 million gallons	$4.00 **million**
200 to 250 million gallons	$4.50 **gallons**
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
over 500 million gallons	$7.50

Maximum Fee

Classification	Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000
entity with more than 5 permits	$250,000
city of the first class	$250,000

4. Multiply line 2 by line 3 (when volume is 50 MG or greater). $ –
5. Fee Determination $ 250,000.00 (355)
   a) If the amount on line 2 is less than 50 million gallons, enter the minimum permit fee of $101.
   b) If the amount on line 4 is greater than the maximum fee, enter the applicable maximum fee.
   c) Otherwise, enter the amount from line 4.
6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line. $ – (354)
7. **Add lines 5 and 6.** Enter the total on this line. This is the **2007** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 250,000 due

Make checks payable to "MN DNR Waters"
Mail forms and fees to: Minnesota DNR - OMB
500 Lafayette Rd Box 10
St Paul MN 55155

paid

Check Amt $ 250,000
Check # 550205

This report and fee are due by February 15th. Please call (651)259-5678 with questions.

STD

1986-5114
2007

2007 MN DNR - Annual Report of Water Use
Installation Worksheet

Permit: **1986-5114** Installation: **1**

Permittee: **NSP CO DBA XCEL ENERGY**

Use: **Other Power Generation**
Source Type: **Ground Water**
Source Name: **QWTA**

Well Unique Number: 402599
Twp: **113** Rng: **15** Sec: **5** Qtr: **ADDC**
Goodhue County

A. If no water was withdrawn this year, indicate the reason.
___ 1. Well Sealed ___ 2. System Removed
___ 3. Water received from an alternate source, specify:
___ 4. Other, specify:

B. List the number of **gallons** withdrawn in each month of 2007. Pumping Rate (GPM): 50

January	632,900	July	929,100
February	498,600	August	932,000
March	529,300	September	791,900
April	537,500	October	1,218,400
May	655,300	November	628,800
June	551,700	December	1,210,900
		Total	9,116,400

C. Measurement method (indicate one)

___ 1. Flow Meter
X 2. Flow Rate Meter with: X Totalizer *or* ___ Hour meter
___ 3. Timing Device with: ___ Hour Meter *or* ___ Electric meter x gpm
___ 4. Alternate method: If not already approved, enclose request for approval
___ 5. Estimated: An approved measuring device or method is required (describe below)

Signature [signature] Date 1/28/08 Phone 651-388-1121

Ext 4958

STD

1986-5114
2007

2007 MN DNR - Annual Report of Water Use
Fee Calculation Worksheet

Permit: **1986-5114** Permitted Volume (MG/Y): **20.0** Permitted Installations: **1**
Use: **Other Power Generation**

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND BEARING WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

1. Enter the total volume of water from all installations of this permit. 9116,400 gallons
2. Divide line 1 by one million, round to the nearest decimal place. 9.1 million gallons
3. If the amount on line 2 is less than 50 million gallons, skip to line 5. If 50 million gallons or greater, enter the **Fee Rate** from the table. $ – per million gallons

Volume Pumped (from line 2)	Fee
Less than 50 million gallons	*Minimum fee $101*
	Fee Rate
50 to 100 million gallons	$3.00
100 to 150 million gallons	$3.50
150 to 200 million gallons	$4.00
200 to 250 million gallons	$4.50
250 to 300 million gallons	$5.00
300 to 350 million gallons	$5.50
350 to 400 million gallons	$6.00
400 to 450 million gallons	$6.50
450 to 500 million gallons	$7.00
over 500 million gallons	$7.50

per million gallons

Maximum Fee

Classification	Fee
entity with 1 to 3 permits	$50,000
entity with 4 to 5 permits	$75,000
entity with more than 5 permits	$250,000
city of the first class	$250,000

4. Multiply line 2 by line 3 (when volume is 50 MG or greater). $ –
5. Fee Determination $ 250,000.00 (355)
   a) If the amount on line 2 is less than 50 million gallons, enter the minimum permit fee of $101.
   b) If the amount on line 4 is greater than the maximum fee, enter the applicable maximum fee.
   c) Otherwise, enter the amount from line 4.
6. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line. $ – (354)
7. **Add lines 5 and 6.** Enter the total on this line. This is the **2007** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 250,000.00 due

Make checks payable to "MN DNR Waters"
Mail forms and fees to: Minnesota DNR - OMB
500 Lafayette Rd Box 10
St Paul MN 55155

paid

Check Amt $ 250,000
Check # 550205

This report and fee are due by February 15th. Please call (651)259-5678 with questions.

MULTI SS

1996-5042
2007

2007 MN DNR - Annual Report of Water Use
Installation Worksheet

Permit: 1996-5042 Installation: 1

Permittee: NSP CO DBA XCEL ENERGY

Source Type: Ground Water
Source Name: QBUA

Well Unique Number: 256074
Twp: 113 Rng: 15 Sec: 5 Qtr: CAAD
Goodhue County

Installation: 1 **First Use: 213 Commercial/Institutional Waterworks**

List the number of **gallons** withdrawn in each month of 2007. Pumping Rate (GPM): 80

January	71,500	July	85,675
February	71,100	August	85,675
March	63,400	September	85,675
April	71,700	October	85,675
May	85,675	November	85,675
June	85,675	December	85,675
		Total	963,100

Installation: 1 **Second Use: 283 Landscaping/Athletic Fields**

List the number of **gallons** withdrawn in each month of 2007. Pumping Rate (GPM): 80

January	0	July	366,400
February	0	August	196,900
March	0	September	228,000
April	0	October	194,600
May	0	November	0
June	143,000	December	0
		Total	1,128,900

C. Measurement method (indicate one)

___ 1. Flow Meter
x 2. Flow Rate Meter with: x Totalizer *or* ___ Hour meter
___ 3. Timing Device with: ___ Hour Meter *or* ___ Electric meter x gpm
___ 4. Alternate method: If not already approved, enclose request for approval
___ 5. Estimated: An approved measuring device or method is required (describe below)

Flow totalizer malfunctioned possibly due to installation of new isolation valve too close to meter. Used average of 2006 May-Dec

Signature [signature] Date 1/25/06 Phone 651-388-1121 Ext 4958

2007 MN DNR - Annual Report of Water Use
Fee Calculation Table

A. Use Code - The code corresponding to the purpose for which the water was appropriated. Fill out one row for each of your permitted water uses.

B. Total Pumped (gallons) - The sum of all appropriations corresponding to the use code in column A. Add the totals from each section of the installation worksheets corresponding to the use code in column A.

C. Total Pumped (million gallons) - Divide the amount in column B by one million (1,000,000). Round to the third decimal place. *For example: 10,745,643 gallons converts to 10.746 million gallons.*

D. Combined Water Used - Combine all non once-through system pumping to determine the volume of water to be charged at the Table A rate.

Use Fee - Non Once-through Systems - Multiply the total volume in column D by the fee rate. Once-through Systems - Multiply the volume in column C by the fee rate.

Fee Rate Table A - Determine fee based on the combined volume in column D.

Volume Pumped (from line 2)		Fee Rate (per million gallons)
Up to 50	million gallons	$2.00
50 to 100	million gallons	$3.00
100 to 150	million gallons	$3.50
150 to 200	million gallons	$4.00
200 to 250	million gallons	$4.50
250 to 300	million gallons	$5.00
300 to 350	million gallons	$5.50
350 to 400	million gallons	$6.00
400 to 450	million gallons	$6.50
450 to 500	million gallons	$7.00
over 500	million gallons	$7.50

Fee Rate Table B - The reporting status for which you qualify is marked with an "X".
If you change your reporting status, you must include your certificate of exemptions.

	Reporting Status	Fee Rate (per million gallons)
	Non-profit corporations and school districts	$150
X	All other once through heating or cooling systems	$300

MULTI SS

1996-5042
2007

2007 MN DNR - Annual Report of Water Use
Fee Calculation Worksheet

Permit: **1996-5042** Permitted Volume (MG/Y): **4.7** Permitted Installations: **1**

NSP CO DBA XCEL ENERGY
PRAIRIE ISLAND TRAINING CENTER WELL
JAMES BODENSTEINER
414 NICOLLET MALL
MINNEAPOLIS MN 55401-1927

Please correct address if needed:

Phone: **612-330-6625**

1. Fill in the table below using one row for each permitted use.

Fee Rate: See the Fee Calculation Table Key on the Next Page

Non Once-Through Systems **Use Rate Table A** based on the toal water in column D

A. Use Code	B. Total Pumped for each use (gallons)	C. Total Pumped for each use (million gallons)	D. Total Pumped (sum of column C)
213	963,100	0.96	2.1
283	1,128,900	1.13	
		Fee Rate (from Table A) $ /million gallons	
		Use Fee (Total Pumped x Rate) $ see below	

Once-Through Systems **Use Rate Table B**

A. Use Code	B. Total Pumped for each use (gallons)	C. Total Pumped (million gallons)
		Fee Rate $
		Use Fee (Total Pumped x Rate) $

2. Sum the use fees for non once-through and once-through pumping: $ _____

3. If the amount on line 2 is less than $101, enter $101 on this line, otherwise enter the amount from line 2. $ _____ (355)

4. Enter the Summer Surcharge fee in whole dollars. $ _____ (355)

5. Complete the Data Verification Form. If a fee is required for a permit amendment or transfer, enter the amount on this line. $ _____ (354)

6. **Add lines 3 and 4.** Enter the total on this line. This is the **2007** water appropriation fee due. Return this fee with the water use reports and any additional information required. $ 250,000 due
multiple permit entity paid

Make checks payable to "MN DNR Waters"
Mail forms and fees to: Minnesota DNR - OMB
500 Lafayette Rd Box 10
St Paul MN 55155

Check Amt $ 250,000
Check # 550,205

This report and fee are due by February 15th. Please call (651)259-5678 with questions.

2007 MN DNR - Annual Report of Water Use
Summer Surcharge Worksheet

A surcharge of $20 per million gallons will be applied to the volume of water used in each of the months of June, July, and August that exceeds the volume of water used in January. The summer surcharge applies to municipal water use, irrigation of golf courses and landscape irrigation. This surcharge is in addition to the water use fee based on the yearly total volume.

For the months listed, total the individual installation volumes for the month in gallons. If the surcharge volume is negative, report zero for that month. Subtract the January total from each of the summer monthly values.

June Total	-	January Total	=	June Surcharge Volume
143,000		0		143,000

July Total	-	January Total	=	July Surcharge Volume
366,400		0		366,400

August Total	-	January Total	=	August Surcharge Volume
196,900		0		196,900

Total Surcharge Volume
(Sum of monthly surcharge volumes) 706,300

divide by 1 million to show in millions of gallons .706 x $20 = $ 14.12

The fee applies when the summer surcharge volume is at least 0.1 million gallons on the last line. Report this fee on line 6 of the Fee Calculation Worksheet. Round down to the nearest whole dollar.

STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

BOX 32, 500 LAFAYETTE ROAD • ST. PAUL, MINNESOTA • 55146

DNR INFORMATION
(612) 296-6157

October 22, 1986

Northern States Power Company
Attn: E. H. Schentzel
414 Nicollet Mall
Minneapolis, MN 55401

Dear Mr. Schentzel:

WATER APPROPRIATION PERMIT 86-5114, ONE WELL, GOODHUE COUNTY

Enclosed is Permit 86-5114 which authorizes appropriation of water from one well for pump bearing lubrication at the Prairie Island Electric Plant located in Section 5, T113N, R15W.

Please read all the conditions of the permit, especially Condition 3.b. This requires you to record the amounts of water appropriated. A Water Use Report will be sent to you each January for reporting the amounts for the previous year. The report must be submitted with the processing fee by February 15 of each year. The fee schedule is $5.00 per each permitted ten million gallons or fraction thereof. The permit authorizes the appropriation of 20 million gallons per year; therefore, the annual processing fee is$10.00. Do not send the report and fee until notified. Failure to submit the report and fee can result in the termination of the permit.

Pursuant to Minnesota Statutes, Section 105.44, Subds. 3 and 6, the applicant, the managers of the watershed district, the board of supervisors of the soil and water conservation district, or the mayor of the city may demand a hearing on the Permit provided the demand for hearing and the bond required are filed with the Commissioner within 30 days of receipt. A corporate surety bond or equivalent security in the amount of $500.00 must accompany the demand for hearing; however, the applicant may be responsible for hearing costs up to $750.00. No bond is required of a public authority which demands a hearing. If no demand for hearing is made or if a hearing is demanded but no bond is filed, the Permit shall become final at the expiration of the 30 days and no appeal may be taken to the State Court of Appeals. Bond forms will be supplied at your request.

Thank you for your cooperation. If you have any questions, please contact Eric Larson at 296-0431.

Sincerely,

DIVISION OF WATERS

Sarah P. Tufford

Sarah P. Tufford, Administrator
Water Use Management Section

SPT/BM:ss

cc: James Cooper, Regional Hydrologist
Goodhue County SWCD
Data Systems/Fox

NA-02633-01
(W-147)
Rev. 4/72

PERMIT NO. 86-5114

☑ APPROPRIATION AND USE OF WATER
☐ WORK IN THE BEDS OF PUBLIC WATERS

HAS BEEN ISSUED TO

Northern States Power Co.
(Applicant)

By The COMMISSIONER
MINNESOTA DEPARTMENT OF NATURAL RESOURCES

[redacted]

POST CONSPICUOUSLY AT PROJECT SITE

NA-02628-02

Department of MINNESOTA Natural Resources
Division of Waters

WATER APPROPRIATION PERMIT

Box 32, Centennial Office Building
St. Paul, MN 55155

PERMIT	
86-5114	
COUNTY	
Goodhue	

IN THE MATTER OF THE APPLICATION FOR APPROPRIATION OF WATERS OF THE STATE, PERMISSION IS HEREBY GRANTED TO:

PERMITTEE	Authorized Agent
Northern States Power Company	E. H. Schentzel

Address
414 Nicollet Mall, Minneapolis, MN 55401

To Appropriate From:

One well - 6 inch diam., 117 ft. deep

Point of Taking: SE¼SE¼NE¼ Section 5, T113N, R15W

Purpose:

Pump bearing lubrication at the Prairie Island Electric plant.

Property Described as:

E½NW¼, NE¼, S½ Section 5, T113N, R15W

Authorized Signature	Title	Date
Sarah P. Tufford Sarah P. Tufford	Administrator Water Use Management Section	10-23-86

This permit is granted subject to the following **CONDITIONS:**

1. QUANTITY:
The permittee is authorized to appropriate water at a rate not to exceed 50 gallons per minute. The total amount of water appropriated shall not exceed 61.4 acre feet or 20 million gallons per year.

2. LIMITATIONS:

(a.) Any violation of the terms and provisions of this permit and any appropriation of the waters of the state in excess of that authorized hereon shall constitute a violation of Minnesota Statutes, Chapter 105.

(b.) This permit shall not be construed as establishing any priority of appropriation of waters of the state.

(c.) This permit is permissive only. No liability shall be imposed upon or incurred by the State of Minnesota or any of its employees, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the permittee relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the permittee, for any damage or injury resulting from any such act or omission, or as stopping or limiting any legal claim or right of action of the state against the permittee, for violation of or failure to comply with the provisions of the permit or applicable provisions of law.

(d.) In all cases where the doing by the permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the permittee, before proceeding therewith, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights and interests necessary therefore.

(e.) This permit shall not release the permittee from any other permit requirements or liability or obligation imposed by Minnesota Statutes, Federal Law, or local ordinances relating thereto and shall remain in force subject to all conditions and limitations now or hereafter imposed by law.

(f.) Unless explicitly specified, this permit does not authorize any alterations of the beds or banks of any public (protected) waters or wetlands. A separate permit must be obtained from the Department of Natural Resources prior to any such alteration.

3. PERMITTEE'S RESPONSIBILITIES:

(a.) MONITORING.

The permittee shall equip each installation for appropriating or using water with a device or employ a method to measure the quantity of water appropriated to within ten (10) percent of actual amount withdrawn unless otherwise specified by special provision.

(b.) REPORTS.

Monthly records of the amount of water appropriated or used shall be recorded for each installation. Such readings and the total amount of water appropriated or used shall be reported annually to the Director of the Division of Waters, on or before February 15 of the following year, upon forms supplied by the Division. Any processing fee required by law or rule shall be submitted with the records whether or not any water was appropriated during the year. Failure to report shall be sufficient cause for terminating the permit 30 days following written notice.

(c.) TRANSFER OR ASSIGNMENT.

Any transfer or assignment of rights, or sale of property involved hereunder shall be reported within 90 days thereafter to the Director of the Division of Waters. Such notice shall be made by the transferee (i.e. new owner) and shall state the intention to continue the appropriation as stated in the permit. This permit shall not be transferred or assigned except with the written consent of the Commissioner.

(d.) MODIFICATION.

The permittee must notify the Commissioner in writing of any proposed changes to the existing permit. This permit shall not be modified without first obtaining the written permission from the Commissioner.

4. COMMISSIONER'S AUTHORITY:

(a.) The Commissioner may inspect any installation utilized for the appropriation or use of water. The permittee shall grant access to the site at all reasonable times and shall supply such information concerning such installation as the Commissioner may require.

(b.) The Commissioner may, as he deems necessary, require the permittee to install gages and/or observation wells to monitor the impact of the permittee's appropriation on the water resource and require the permittee to pay necessary costs of installation and maintenance.

(c.) The Commissioner may restrict, suspend, amend, or cancel this permit in accordance with applicable laws and rules for any cause for the protection of public interests, or for violation of the provisions of this permit

5. PUBLIC RECORD:

All data, facts, plans, maps, applications, annual water use reports, and any additional information submitted as part of this permit, and this permit itself are part of the public record and are available for public inspection at the offices of the Division of Waters. The information contained therein may be used by the Division as it deems necessary. The submission of false data, statements, reports, or any such additional information, at any time shall be deemed as just grounds for revocation of this permit.

ADDITIONAL CONDITIONS

1. The permittee shall notify the Commissioner prior to abandoning, removing, covering, plugging, or filling the well(s) from which the authorized appropriation was made. The well must be abandoned by a licensed well driller and in accordance with the procedures required under Minnesota Health Department Rules (4725.2500 - 4725.2900).

cc: James Cooper, Regional Hydrologist
Goodhue County SWCD
Data Systems/Fox

W.A. permit
86-5114

Northern States Power Company

414 Nicollet Mall
Minneapolis, Minnesota 55401
Telephone (612) 330-5500

June 25, 1986

Department of Natural Resources
Regional Office
2300 Silver Creek Road N E
Rochester, Minnesota 55101

Attention: James Cooper, Regional Hydrologist

PRAIRIE ISLAND PLANT WATER APPROPRIATION APPLICATION

I am enclosing a completed notarized application for groundwater appropriation at the Prairie Island Electric generating plant in Red Wing, Minnesota.

The water will be used for pump bearing lubrication at the old intake structure adjacent to the turbine building.

The fact that this appropriation is adjacent to the river, and isolated from other groundwater users, should eliminate any impact on adjacent property owner's wells.

A $30 check, payable to the Minnesota State Treasurer, is included with this submittal. Please issue a permit for this appropriation. If there are any questions, call me at 330-5510.

E. H. Schentzel

E H Schentzel, Administrator
Regulatory Liaison

ah

Enclosures

cc:
- City of Red Wing
- Goodhue County Soil & Water Cons Dist
  RR1 - Box 40F
  Zumbrota, MN 55412

bcc: G D Heberling
W E Jensen

FILE
ERAD RECORD CENTER

NA-02623-01
(Rev. 4/83)

Department of MINNESOTA Natural Resources
Division of Waters

BOX 32, CENTENNIAL OFFICE BUILDING
ST. PAUL, MINNESOTA 55155
(612) 296-4800

OFFICE USE ONLY	P.A. No	
		Date(s) Served
	☐ SWCD	
	☐ WSD	
	☐ CITY	

PERMIT APPLICATION FOR APPROPRIATION OF WATERS OF THE STATE—NON-IRRIGATION

NOTICE OF WARNING: All information provided on this form is considered to be public information in accordance with the Minnesota Data Privacies Act (M.S. 15.1611 to 15.1698).

➤ SEE INSTRUCTIONS . . . TYPE OR PRINT CLEARLY.

A

1. Applicant Name	2. Authorized Agent (if applicable)	3. Home Phone No.
Northern States Power Co. (Prairie Island)	E H Schentzel	[redacted]
4. Mailing Address	**5. City, State, Zip Code**	**6. Work Phone No.**
414 Nicollet Mall	Minneapolis, MN 55401	(612) 330-5510

B

7. APPROPRIATION FOR: ("X" and fill in appropriate code)
- a. ☐ Waterworks( )
- b. ☒ Power Generation(25)
- c. ☐ Air Conditioning( )
- d. ☐ Industrial( )
- e. ☐ Temporary( )
- f. ☐ Water Level Maintenance( )
- g. ☐ Other _____

8. Source of Water (X one and complete) ➤ Additional information MUST be supplied for each source Refer to instructions(8&9)for requirements
- a. ☒ One well
- b. ☐ _____ wells manifolded together
- c. ☐ Stream, ditch, or river (name) _____
- d. ☐ Wetland, lake, or impoundment (name) _____
- e. ☐ Other _____

9. Point of Taking/Pumping Site
- a. SE ¼ of SE ¼ of NE ¼
- b. Section No. 5
- c. Township No. 113 N
- d. Range No. 15 W
- e. County Goodhue

10. Means of Taking and Rate
- a. ☒ 1 (no.) stationary pump(s) at 50 gpm each
- b. ☐ _____ (no.) portable pump(s) at _____ gpm each
- c. ☐ Gravity Flow at _____ gpm/cfs
- d. ☐ Other _____ gpm/cfs (circle one)

11. Method of Measurement
- a. ☒ Flow Meter
- b. ☐ Timing Device
- c. ☐ Estimated Amount
- d. ☐ Other _____

12. Means of Conveyance
- a. ☒ pipe 1½" diam 50' length
- b. ☐ tank _____ gal. capacity
- c. ☐ channel _____ length
- d. ☐ other _____

13. Legal Description-Land Owned/Rented*

Township No.	Range No.	Sect.	Fractional Sect. Gov't Lots
113N	15W	5	

*Rental Agreement MUST Be Submitted

14. Months of Appropriation
- ☒ JAN ☒ MAY ☒ SEP
- ☒ FEB ☒ JUN ☒ OCT
- ☒ MAR ☒ JUL ☒ NOV
- ☒ APR ☒ AUG ☒ DEC

15. Schedule of Appropriation ("X" one and complete)
- a. ☒ Continuous 24 hrs./day 31 days/mo. 12 mo./yr.
- b. ☐ Seasonal
- c. ☐ Temporary

Beginning date _____
End date _____

16. Total Annual Use (MGY): 20

17. Discharge To and Quantity
- a. ☒ Stream, Ditch or River Mississippi (name) (20) MGY
- b. ☐ Wetland, Lake, Impoundment _____ (name) ( ) MGY
- c. ☐ Sewer System ( ) MGY
- d. ☐ Other ( ) MGY

18. Discharge Point
- a. SE ¼ of SE ¼ of NE ¼
- b. Section No. 5
- c. Township No. 113 N
- d. Range No. 15 W
- e. County Goodhue

19. Means of Discharge and Rate
- a. ☐ _____ (no.) stationary pump(s) at _____ gpm each
- b. ☐ _____ (no.) portable pump(s) at _____ gpm each
- c. ☒ Gravity Flow at 12 gpm/cfs
- d. ☐ Other _____ gpm/cfs (circle one)

20. Additional Requirements: ("X" box for each submitted)
- a. ☒ Map or Air Photo which shows:
  1) Point of Taking or Pumping Site
  2) Test Hole Location 3) Boundaries of Property Controlled and Area of Use 4) Discharge Point
- b. ☒ FILING FEE Payable to "STATE TREASURER"
- c. ☒ Statement of Justification/Alternative Sources
- d. ☐ Additional Documents Required

C

➤ I hereby make application pursuant to Minnesota Statutes Chapter 105.41 and all supporting rules for a permit to appropriate water in accordance with all supporting maps, plans, and other information submitted with this application. The information submitted and statements made concerning this application are true and correct to the best of my knowledge.

21. Applicant or Authorized Signature	22. Date
E H Schentzel [signature]	6/25/86 [signature]

STATE OF Minnesota

COUNTY OF Hennepin

Subscribed and sworn to before me this 25th day of June 19 86

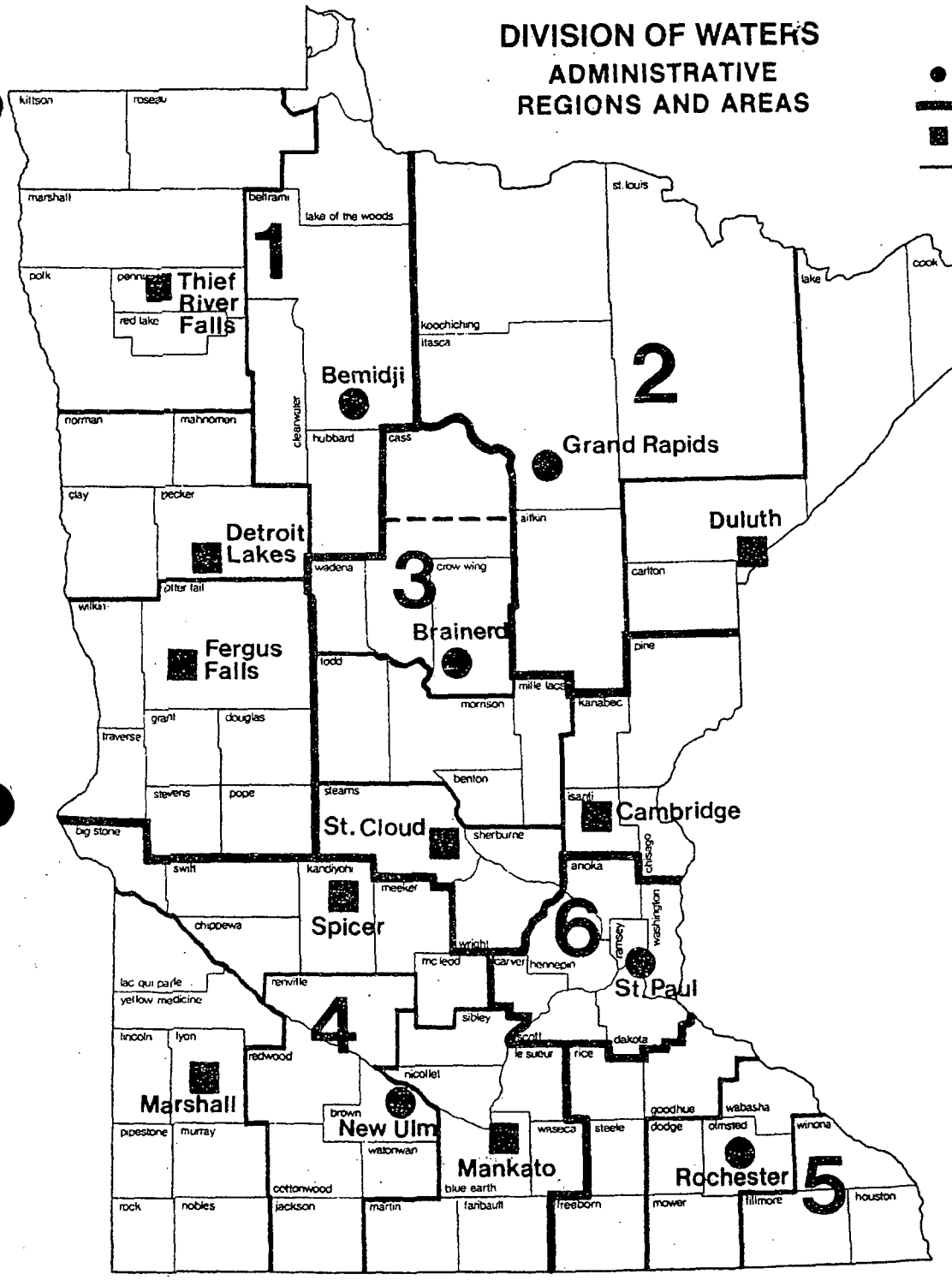
My commission expires October 16, 1988

LURENE M. JACKSON
NOTARY PUBLIC-MINNESOTA
HENNEPIN COUNTY
My Commission Expires Oct. 16, 1988

Signature of Notary [signature]

➤ IMPORTANT: Submit this application and all supporting data to the DNR Regional Office serving you. (See back for addresses)
APPLICANT: KEEP YELLOW COPY FOR YOUR RECORDS

DIVISION OF WATERS
ADMINISTRATIVE REGIONS AND AREAS



REGION 1
DNR- Division of Waters
2115 Birchmont Beach Road N.E.
Bemidji, MN 56601

Thief River Falls Area
DNR - Division of Waters
P.O. Box 502
Thief River Falls, MN 56701
(218) 681-7789

Detroit Lakes Area
DNR - Division of Waters
P.O. Box 823
Detroit Lakes, MN 56501
(218) 847-1579

Fergus Falls Area
DNR - Division of Waters
1221 Fir Avenue East
Fergus Falls, MN 56537
(218) 739-7576

REGION 2
DNR - Division of Waters
1201 East Highway 2
Grand Rapids, MN 55744
(218) 327-1716

Duluth Area
DNR - Division of Waters
French River Hatchery
10029 North Shore Drive
Duluth, MN 58804
(218) 525-1872

REGION 3
DNR - Division of Waters
424 Front St., Box 648
Brainerd, MN 56401
(218) 828-2605

Cambridge Area
DNR - Division of Waters
915 South Highway 65
Cambridge, MN 55008
(612) 689-2832

St. Cloud Area
DNR - Division of Waters
3725 12th St. North
St. Cloud, MN 56301
(612) 255-4278

REGION 4
DNR - Division of Waters
Box 756, Highway 15 South
New Ulm, MN 56073
(507) 354-2196

Spicer Area
DNR - Division of Waters
P.O. Box 457
232 Lake Ave. South
Spicer, MN 56488
(612) 796-2161

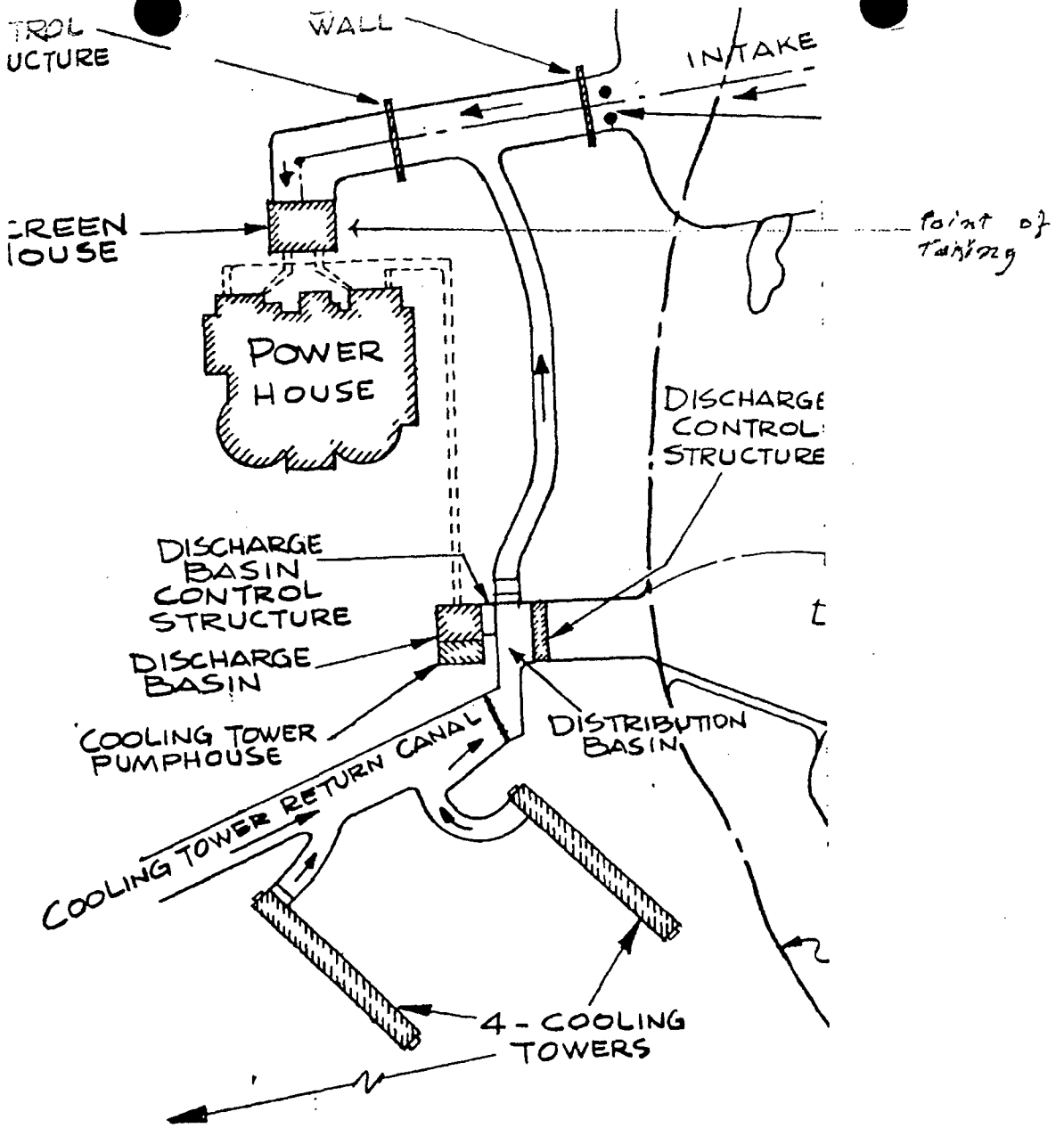
Mankato Area
DNR - Division of Waters
79 Navaho Ave.
P.O. Box 491
Mankato, MN 56001
(507) 389-6713

Marshall Area
DNR - Division of Waters
Box 111, 1400 E. Lyon
Marshall, MN 56258
(507) 537-7258

REGION 5
DNR - Division of Waters
2300 Silver Creek Road, N.E.
Rochester, MN 55901
(507) 285-7430

REGION 6
DNR - Division of Waters
1200 Warner Road
St. Paul, MN 55106
(612) 296-7523

CENTRAL OFFICE
DNR - Division of Waters
Box 32, Centennial Office Building
St. Paul, MN 55155
(612) 296-4800



PRAIRIE ISLAND PLANT
CIRCULATING WATER SYSTEM

5-5-71 [illegible]

Minnesota Department of Natural Resources

500 Lafayette Road
St. Paul, Minnesota 55155-40__ 32

April 29, 2004

Jim Bodensteiner, Sr. Environmental Analyst
Northern States Power Company d/b/a Xcel Energy
414 Nicollet Mall
Minneapolis, MN 55401

Dear Mr. Bodensteiner:

AMENDMENT OF PERMIT 78-5153, GROUND WATER, GOODHUE COUNTY

Enclosed is Permit 78-5153 authorizing appropriation of water from a well located in the NE¼ SE¼, Section 5, Township 113 North, Range 15 West for pump motor cooling and lubrication of pump seals in the cooling tower system at the Prairie Island Nuclear Generating Plant in Welch, Minnesota. In accordance with your request, Permit 78-5153 has been amended to correct the purpose. It is our understanding that cooling tower make-up water is supplied by river water, not ground water.

Please read all permit conditions and limitations. As a condition of this permit you are required to install a meter to record monthly and total volumes of water appropriated annually within 10% accuracy. A Water Use Report will be sent to you each January for reporting the amounts for the previous year. The report must be submitted with a processing fee by February 15 each year. The report and fee must be submitted as long as the permit is active even if no water is used. Failure to submit the Water Use Report and fee can result in the termination of your permit. Please do not send the report and fee until notified.

Thank you for your cooperation. If you have any questions, please contact Annette Marier at (651) 296-0435 or your Area Hydrologist, Bill Huber at (651) 645-5601.

Sincerely,
DNR WATERS

James Japs, Supervisor
Water Permit Programs

c: Dave Leuthe, Regional Hydrologist
Bill Huber, Area Hydrologist
Goodhue County SWCD
Central Office SWUDS

Minnesota
DEPARTMENT OF NATURAL RESOURCES

WATER APPROPRIATION PERMIT

AMENDED

PERMIT NUMBER
78-5153
COUNTY
GOODHUE (25)

THIS PERMIT SUPERSEDES THE ORIGINAL PERMIT AND ALL PREVIOUS AMENDMENTS.

IN THE MATTER OF THE APPLICATION FOR APPROPRIATION OF WATERS OF THE STATE, PERMISSION IS HEREBY GRANTED TO:

PERMITTEE	Authorized Agent
NORTHERN STATES POWER COMPANY d/b/a Xcel Energy	Prairie Island CT Well

Address

414 Nicollet Mall, Minneapolis MN 55401-1927 Phone (612) 330-6625

To appropriate from:

Well 2: 6 inch diameter, 100 feet deep, Unique No. 611076 (QWTA)

Point of Taking: SE¼ NE¼ NE¼ SE¼, Section 5, Township 113 North, Range 15 West.

Purpose:

Consumptive use for pump motor cooling and lubrication of pump seals in the cooling tower system at a nuclear power generating plant.

Use Code (226) Nuclear Power Plant

Property owned (point of taking and project area):

Prairie Island Plant, 1717 Wakonade Drive East, Welch, MN
E½, Section 5, Township 113 North, Range 15 West.

Mississippi River (Red Wing) and Lake Pepin Watershed (38)

Authorized Signature	Title	Date
James Japs	Supervisor Water Permit Programs	4/29/2004

This permit is granted subject to the following **CONDITIONS**:

1. **QUANTITY:**

The Permittee is authorized to appropriate water at a rate not to exceed **40** gallons per minute.

The total amount of water appropriated shall not exceed **XXX** acre-feet or **15.0** million gallons per year.

2. **LIMITATIONS:**

(a) Any violation of the terms and provisions of this permit and any appropriation of the waters of the state in excess of that authorized hereon shall constitute a violation of Minnesota Statutes, Chapter 103G.

(b) This permit shall not be construed as establishing any priority of appropriation of waters of the state.

(c) This permit is permissive only. No liability shall be imposed upon or incurred by the State of Minnesota or any of its employees, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the Permittee relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the Permittee, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the Permittee, for violation of or failure to comply with the provisions of the permit or applicable provisions of law.

(d) In all cases where the doing by the Permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the Permittee, before proceeding therewith, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests necessary therefore.

(e) This permit shall not release the Permittee from any other permit requirements or liability or obligation imposed by Minnesota Statutes, Federal Law, or local ordinances relating thereto and shall remain in force subject to all conditions and limitations now or hereafter imposed by law.

(f) Unless explicitly specified, this permit does not authorize any alterations of the beds or banks of any public (protected) waters or wetlands. A separate permit must be obtained from the Department of Natural Resources prior to any such alteration.

(over, please)

FILE COPY
E. G. A. D.
RECORDS CENTER

Prairie Island
MN DNR
General

August 2, 1978

G V WELK Manager, Regulatory Compliance & Services — General Office

J M PAPPENFUS Superintendent, Environmental — General Office

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
DNR Permit to Appropriate Ground Water
PA78-5153, dated 7/27/78 - Industrial Cooling

Attached are two copies of the subject permit and the orange display card for the ground water appropriation at Prairie Island.

Please review all conditions of the permit with particular attention to the following:

Special Provision 2 Pump must be equipped with a flow meter that will measure the quantity of water pumped to within two percent plus or minus of the actual flow. Monthly meter readings shall be recorded for the pump and this and the total amount of water appropriated shall be included in the annual pumping report.

Special Provision 6 A copy of the well log and production testing results must be sent to the Division of Waters upon completion of the well installation.

Please add this appropriation to your annual pumping report.

Lurene M Jackson

LURENE M JACKSON, Staff Assistant
Regulatory Activities

ym

attachments

bcc: L R Salmela

W 8 -59
Re· 67

Minnesota Conservation Department
DIVISION OF WATERS, ~~SOILS AND MINERALS~~
~~Centennial Office Building,~~ St. Paul, Minnesota 55101
444 Lafayette Road, Space Center Bldg.

P.A. No. 78-5153

IN THE MATTER OF THE APPLICATION OF Northern States Power Company

for a PERMIT TO APPROPRIATE GROUND WATER.

PERMIT

Pursuant to Minnesota Statutes, Chapter 105, and on the basis of statements and information contained in the permit application, letters, maps, and plans submitted by the applicant, and other supporting data, all of which are made a part hereof by reference,

PERMISSION IS HEREBY GRANTED to Northern States Power Company Attn: G. V. Welk, Mgr. Reg. Activities, whose address for the purpose of notices and other communications pertaining to this permit is 414 Nicollet Mall, Minneapolis, Minnesota 55401 subject to change by written notice from the permittee,

to appropriate ground water by means of one new well, 6" diameter x 60' deep.
located on property described as Gov't lot 5, Section 4, T113N, R15W.
Land owned: that part of Section 4 lying west of Mississippi River and Section 5, T113N, R15W as further described in the application and made a part hereof by reference
for the purpose of industrial water supply for cooling pump motors and lubrication of pump seals in the cooling tower system on a continuous basis.

COUNTY GOODHUE

This permit is granted subject to the following GENERAL and SPECIAL PROVISIONS:

GENERAL PROVISIONS

1. This permit shall not release the permittee from any liability or obligation imposed by Minnesota Statutes or local ordinances relating thereto and shall remain in force subject to all conditions and limitations now or hereafter imposed by law.
2. This permit is not assignable except with the written consent of the Commissioner of Conservation.
3. The Director of the Division of Waters, Soils and Minerals shall be notified at least five days in advance of the commencement of the work authorized hereunder.
4. No change shall be made, without written permission previously obtained from the Commissioner of Conservation, in the hydraulic dimensions, capacity or location of any items of work authorized hereunder.
5. The permittee shall grant access to the site at all reasonable times during and after construction to authorized representatives of the Commissioner of Conservation for inspection of the operation authorized hereunder.
6. This permit may be terminated by the Commissioner of Conservation, without notice, at any time he deems it necessary for the conservation of the water resources of the state, or in the interest of public health and welfare, or for violation of any of the provisions of this permit, unless otherwise provided in the Special Provisions.
7. In all cases where the doing by the permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the permittee, before proceeding therewith, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights and interests necessary therefor.
8. This permit is permissive only. No liability shall be imposed upon or incurred by the State of Minnesota or any of its officers, agents or employees, officially or personally, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the permittee or any of its agents, employees, or contractors relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the permittee, its agents, employees, or contractors, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the permittee, its agents, employees, or contractors for violation of or failure to comply with the provisions of the permit or applicable provisions of law.
9. The permittee may appropriate ground water at a rate of 50 gallons per minute, except that during an emergency the rate may be increased to the capacity of the installed equipment. The total amount of water appropriated shall not exceed XXX acre feet or 26.3 million gallons per year.
10. Acceptance of the permit by the permittee shall constitute an agreement to all the provisions hereof and shall constitute consent to the Commissioner of Conservation and his authorized representatives to inspect, measure, and collect hydrologic or geologic data. Permittee at reasonable designated times shall pump his well or wells at a constant rate for the purpose of measuring and collecting hydrologic and hydraulic data regarding the water-bearing formation and the well.
11. The permittee shall have available for inspection and use of the Commissioner of Conservation or his agents at all times a continuous record of pumping operations entered on forms supplied by the Division of Waters, Soils and Minerals setting forth the dates, number of hours, and rates of pumping. On or before January 15 of each year, a notarized copy of such record for the preceding year shall be mailed to the Division of Waters, Soils and Minerals, Minnesota Conservation Department, St. Paul Minnesota, 55101.
12. The well shall be constructed with a circular opening at least two inches in diameter located at or near the top of the casing to permit water level measurements to be made. Construction of the circular opening shall be in conformance with the sanitary standards approved by the State Board of Health.
13. The permittee shall be jointly responsible with the contract well driller for compliance with the requirements for submission of well logs and test data to the Division of Waters, Soils and Minerals under Minnesota Statutes, Section 105.51, and shall inform the Director, Division of Waters, Soils and Minerals, of the name and address of the contractor five days before commencement of construction of the well.

(over)

W-147
Rev. 4-72

PERMIT NO. 78-5153

☒ APPROPRIATION AND USE OF WATER
☐ WORK IN THE BEDS OF PUBLIC WATERS

HAS BEEN ISSUED TO

Northern States Power Co.
(Applicant)

By The COMMISSIONER
MINNESOTA DEPARTMENT OF NATURAL RESOURCES

[redacted]

POST CONSPICUOUSLY AT PROJECT SITE

FILE COPY
E. G. A. D.
RECORDS CENTER

April 13, 1978

John Chell, Regional Hydrologist
Minnesota Department of Natural Resources
Division of Waters, Region V
2300 Silver Creek Road, NE
Rochester, Minnesota 55901

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Application for Permit to Appropriate Ground Water

Enclosed is an application for a permit to appropriate ground water by means of a new, permanent, six inch diameter well at our Prairie Island Nuclear Generating Plant in Red Wing, Minnesota. Also enclosed is a statement of Environmental Impact and Project Justification, along with related sketches and our check for $15.00 to cover the filing fee.

The new well will be used to provide industrial water supply for cooling pump motors and lubricating pump seals in the existing Prairie Island cooling tower system. Rate of appropriation is expected to be 50 gpm (avg) with an estimated maximum appropriation of 26.3 million gallons per year.

The present pump motor cooling method utilizes heated river water from the plant's condenser cooling system. The heated river water does not cool to the desired degree and contains large quantities of dissolved solids which tend to settle out in small diameter, low-flow piping and cause plugging of the lines. Once the new well supply has been integrated into the present lube cooling system piping, the existing water supply will be valved-out and retained for use as back-up. This water supply conversion is scheduled for late spring, 1978.

A copy of this application and attachments, has been forwarded to the City of Red Wing and the Goodhue County Soil & Water Conservation District in Zumbrota, as required by applicable state statutes.

Your early consideration of this application and issuance of the permit will be appreciated. If you have any questions, please contact Ed Schentzel of this office on (612)330-5510.

G V WEIK, Manager
Regulatory Activities

ym

attachments

Cc: E H Schentzel
Goodhue County Soil & Water Conserv Distr
City of Red Wing

bcc: G G Hanson
L R Salmela

W-53
Rev. 77

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

Application No. _____
Date Received _____
(for department use only)

APPLICATION FOR PERMIT TO APPROPRIATE OR USE WATERS
OF THE STATE OF MINNESOTA

SECTION A - GENERAL PROJECT DATA - *TO BE COMPLETED BY ALL APPLICANTS - (print or type all information provided)*

Northern States Power Co, applies pursuant to Minnesota Statutes Chapter 105 and all other applicable
applicant (print or type)
statutes for a permit to appropriate or use water as hereinafter set forth or as disclosed by supporting data attached.

SOURCE OF WATER: *(check and complete)*
- [X] a single well 6 inches in diameter and 60 feet deep
- [ ] _____ wells manifolded together *(attach engineering plans of well system showing relative location, diameter and depth of the well system)*
- [ ] stream, ditch or river known as _____ *(state name of stream)*
- [ ] natural lake or impoundment known as _____ *(state name of lake or impoundment)*
- [ ] other source - _____ *(includes artificial pits, tile system sumps, private impoundments, etc.--briefly describe source as best as possible stating size, depth and dimensions where appropriate.)*

IMPORTANT: If the source of water is a lake or stream, please carefully read Section E of the attached instructions which explains certain additional items that must be included as part of your application before it can be considered complete.

LEGAL DESCRIPTION OF POINT OF TAKING: *(fill out as applicable)* SE ¼ of ___ ¼ of ___ ¼ of Section 5, Township No. 113N, Range 15W, in the County of Goodhue.

NOTE: If point of taking is within a platted area attach a properly labeled copy of the plat.

SPECIFIC USE OF WATER: *(check and complete)*
- [ ] domestic water supply for over 25 persons
- [ ] municipal water supply for population of _____ people
- [ ] agricultural irrigation of _____ acres of [ ] wild rice, [ ] upland crops
- [ ] commercial water supply for _____ *(state specific uses)*
- [X] industrial water supply for Cooling water for pump motors *(state specific uses)*
- [ ] irrigation of _____ acres of [ ] golf course, [ ] lawn
- [ ] other *(specify)* _____

STATEMENT OF ENVIRONMENTAL IMPACT AND PROJECT JUSTIFICATION: *(Carefully read Section A of the attached instructions which outlines basic environmental impact and project justification concerns. Your application is not complete unless you prepare and attach a separate statement in accordance with Section A of the instructions.)*

LAND DESCRIPTION: *(fill out as as applicable--attach additional sheets if necessary.)*

	Fractional Section(s) or Gov. Lot(s),	Section,	Township No.,	Range
Lands owned				
		5	113N	15W
Lands leased or rented *(specify which--attach copy of all land use agreements)*				

NOTE: If the property in question is wholly or partially within a platted area, substitute the appropriate lot, block and subdivision description where the fractional section or government lot description is required. Refer to your tax statement for proper format if not known.

SECTION B - DETAILED PROJECT DATA - *TO BE COMPLETED BY ALL APPLICANTS (EXCEPT FOR AGRICULTURAL IRRIGATION)*

MAP REQUIREMENT: *(mandatory)* Attach a properly labeled copy of a map or aerial photo which shows the lands owned, lands leased, land rented, the point(s) of taking, the area(s) of use and the point(s) of discharge.

ENGINEERING DATA:
- Means of appropriation - [X] permanent pump, [ ] portable pump, [ ] gravity *(include engineering plans of gravity systems)*
- Rate of appropriation - 50 gpm average _____ gpm maximum
- Estimate of annual use in millions of gallons per year - _____ average; 26.3 maximum
- Schedule of appropriation - *(attach separate schedule of appropriation if monthly use is variable--municipal and domestic water supply systems are normally exempt from this requirement)*
- Life expectancy of project - 40 years
- Method of measuring appropriation - [ ] flow meter, [X] hour meter, [ ] other *(describe)*
- Flow or circulation diagram - *(attach separate diagram showing the various uses of the water--municipal and domestic water supply systems are normally exempt from this requirement)*

SECTION C - DETAILED PROJECT DATA - TO BE COMPLETED BY APPLICANTS [illegible]

IMPORTANT: All irrigation projects which require the appropriation and use of groundwater from wells will be classed as either Class A or Class B applications as provided by Minnesota Statutes, Chapter 105. Carefully read Section D of the attached instructions for further information regarding Class A and B applications. Class B applications are not complete until all additional mandatory data is received in addition to what is specifically requested below.

MAP REQUIREMENT: Attach a properly labeled copy of an ASCS aerial photo or photo composite which shows the lands owned, the lands leased, the lands rented, the point(s) of taking and the fields to be irrigated. A Class B applicant may find it convenient to show the foregoing on his photo composite showing location of vicinity wells.

ENGINEERING DATA: Means of appropriation - ☐ permanent pump, ☐ portable pump, ☐ gravity
(include engineering plans of gravity systems)

Actual acreage to be irrigated - _____ acres

Rate of appropriation - _____ gallons per minute

Schedule of irrigation - *(in inches per acre)*

March		July	
April		August	
May		September	
June		October	

Total annual use - _____ inches/acre/year; _____ million gallons/year *(fill in one)*

Major soil types and percent of each - _____

Maximum slope to be watered - _____

Major crops to be irrigated - _____

Type of irrigation system and life expectancy - _____

NOTIFICATION - *REQUIRED OF ALL APPLICANTS*

I have supplied a copy of this application and all supporting documents to the following units of government affected by my project:

1) Goodhue County Soil & Water Cons Distr (Name of Soil and Water Conservation District), 4/7/78 (Date), 363 Main St, Zumbrota MN 55992 (Address)

2) _____ (Name of Watershed District), _____ (Date), _____ (Address)

3) Red Wing, Minnesota (Name of City), 4/7/78 (Date), 315 W 4th St, Red Wing MN 55066 (Address)

Applicant declares that information submitted herewith and statements made herein are a true and correct representation of the facts, and that the filing of this application and information with the Commissioner of Natural Resources is prima facie evidence of the correctness thereof.

I have enclosed the following checked items as supporting data to my application:

- ☒ $15.00 filing fee)
- ☒ map or plat) *required with all applications*
- ☒ statement of justification) and environmental impact)
- ☐ map and list of well information
- ☐ copy of test hole logs
- ☐ copy of well log
- ☐ pumping test results
- ☐ low flow contingency plan
- ☐ lease or other agreement
- ☒ appropriation schedule
- ☐ statements of support from riparian owners
- ☐ plans and profiles
- ☒ explanatory letter
- ☒ circulation or flow diagram
- ☐ other *(describe)* _____

Dated this 7th day of April, 1978

Applicant Northern States Power Company

Authorized Signature G V Welk

G V WELK Manager, Reg Activities

Address 414 Nicollet Mall

City Minneapolis

State Minnesota Zip Code 55401

Phone 612 330-5982
area code - local number

AFFIDAVIT

On this 7th day of April, 1978, before me personally appeared G V WELK, Mgr, Reg Activities who being first duly sworn and to me known to be the person(s) who executed the foregoing application, acknowledges that he executed the same as his own free act and deed and that the statements, maps, plans, documents, and other supporting data are true and correct according to his best knowledge and belief.

Notary Public Lurene M Jackson

Hennepin County

My commission expires October 18, 1981

LURENE M. JACKSON
NOTARY PUBLIC - MINNESOTA
HENNEPIN COUNTY
My Commission Expires Oct. 18, 1981

Northern States Power Company

Prairie Island (Nuclear) Generating Plant

Application For Permit To Appropriate Water

March, 1978

Statement of Environmental Impact
And Project Justification:

1. No public or private benefits are expected as a result of drilling this new well.

2. Ground waters in this area are used for domestic and irrigation purposes. Agriculture is the primary use of the land in the area.

3. The new well should not change soil, land character, or water quality.

4. Public resources should not be impaired or private parties affected by the new appropriation.

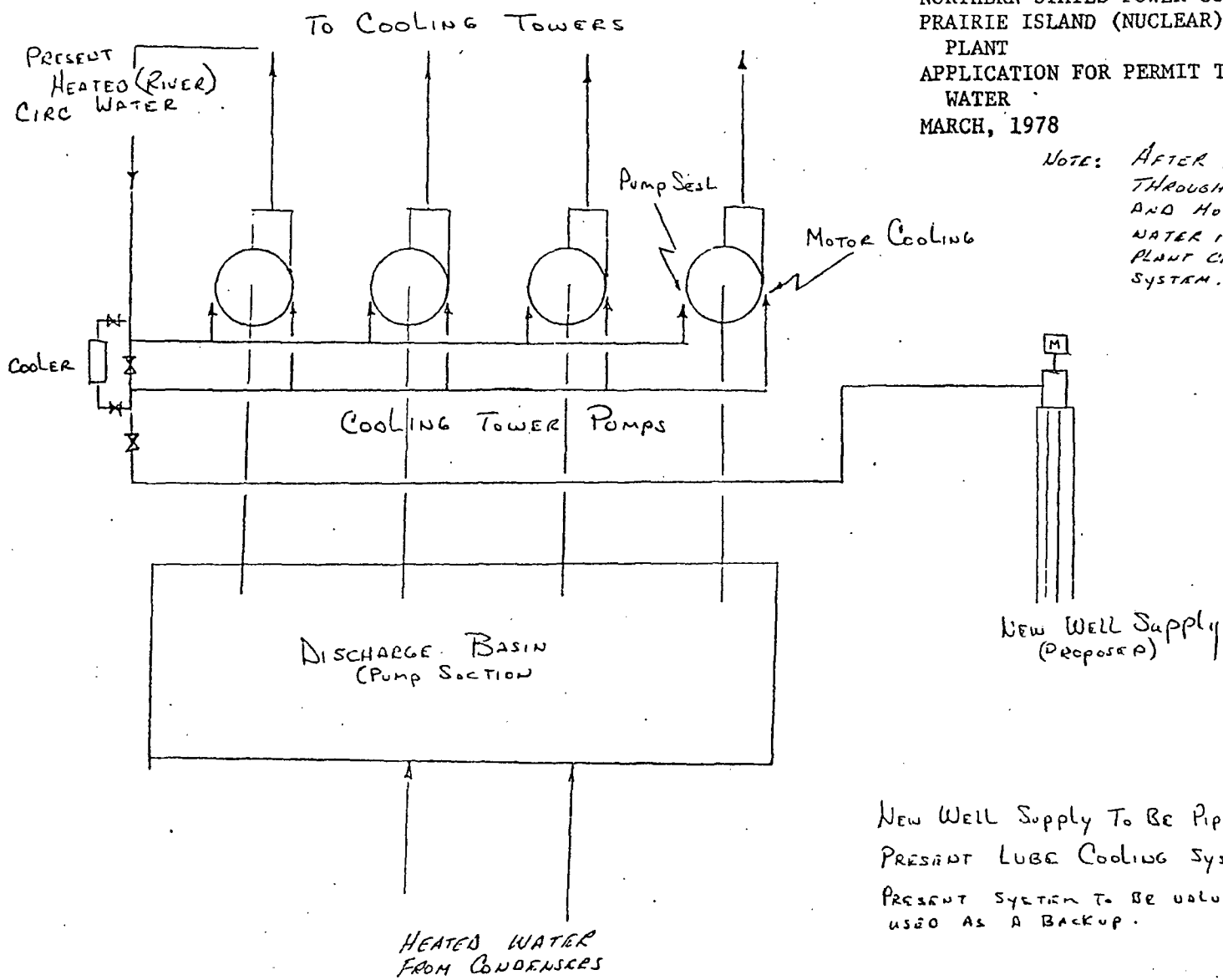
5. Heated river water from the plant condenser cooling system is presently used to supply pump motor coolers and pump seals. Heated water, even after passing through a cooler is at manufacturer's maximum limits. Also, river water containing large quantities of dissolved solids is settling out in small diameter, low flow lines causing plugging.

6. The new well will supply the needed cool clean water.

ATTACHMENT NO. 1

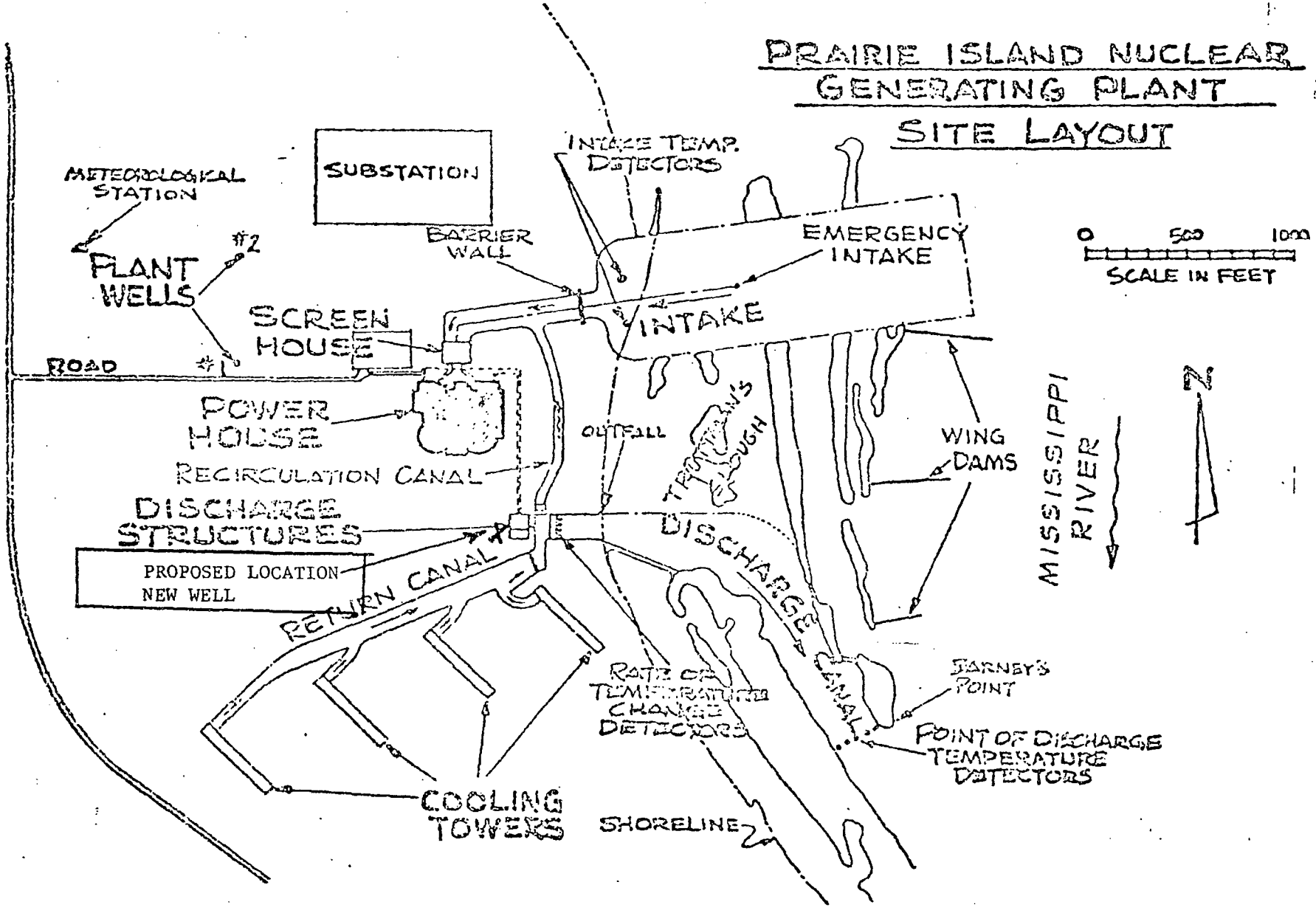
NORTHERN STATES POWER COMPANY
PRAIRIE ISLAND (NUCLEAR) GENERATING PLANT
APPLICATION FOR PERMIT TO APPROPRIATE WATER
MARCH, 1978

NOTE: AFTER PASSING THROUGH PUMP SEAL AND MOTOR OIL COOLER WATER IS RETURNED TO PLANT CIRCULATING WATER SYSTEM.



NEW WELL SUPPLY TO BE PIPED INTO PRESENT LUBE COOLING SYSTEM PIPING, PRESENT SYSTEM TO BE VALVED OUT AND USED AS A BACKUP.

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
SITE LAYOUT



W-221
Rev. 7-77

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

LOCAL UNIT OF GOVERNMENT COMMENT FORM

On April 13 (date), 19 78, Northern States Power Company (applicant's name)

served a copy of his/her water resources permit application to; [X] appropriate water, [ ] work in the bed of public water, on the Goodhue County Soil & Water Conservation District - 363 Main St, Zumbrota MN 55992 (name of Soil & Water Conservation District, Watershed District, or City)

I, _____ (name of official), am the _____ (official's title) of the above named unit of government and the following comments are submitted for consideration by the Department of Natural Resources.*

* Additional space on reverse.
Attach additional sheets if necessary.
Return comments to appropriate regional DNR office.

Although Minnesota Statutes 1977, Section 105.44, Subdivision 2 allows 30 days for response from cities, watershed districts, and soil and water conservation districts, the Department of Natural Resources would appreciate a response within 15 days if at all possible.

Dated _____, 19____

Signature _____

Title _____

Address _____

City _____ Zip _____

Phone Number _____

W-221
Rev. 7-77

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

LOCAL UNIT OF GOVERNMENT COMMENT FORM

On April 13 (date), 19 78, Northern States Power Company (applicant's name)

served a copy of his/her water resources permit application to; [X] appropriate water, [ ] work in the bed of public water, on the Red Wing, Minnesota - 315 W 4th St, Red Wing MN 55066 (name of Soil & Water Conservation District, Watershed District, or City)

I, _____ (name of official), am the _____ (official's title) of the above named unit of government and the following comments are submitted for consideration by the Department of Natural Resources.*

* Additional space on reverse.
Attach additional sheets if necessary.
Return comments to appropriate regional DNR office.

Although Minnesota Statutes 1977, Section 105.44, Subdivision 2 allows 30 days for response from cities, watershed districts, and soil and water conservation districts, the Department of Natural Resources would appreciate a response within 15 days if at all possible.

Dated _____, 19____

Signature _____

Title _____

Address _____

City _____ Zip _____

Phone Number _____

STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

500 LAFAYETTE ROAD • ST. PAUL, MINNESOTA • 55155-4032

DNR INFORMATION
(612) 296-6157

June 13, 1995

Northern States Power Company
Attn: Gerald Joachim
414 Nicollet Mall
Minneapolis, MN 55401-1927

JUN 1 [illegible]

Dear Mr. Joachim:

AMENDED PERMIT 69-0172, MISSISSIPPI RIVER(25-17P), GOODHUE COUNTY

Enclosed is Amended Permit 69-0172, authorizing appropriation of water for operation of a nuclear steam electric generating plant located in Section 5, T113N, R15W. In accordance with your request, Permit 69-0172 has been amended to reflect an increase in the pumping rate from 610,400 gallons per minute to 630,000 gallons per minute.

Please read all permit conditions and limitations. As a condition of this permit you are required to install a flow meter to record monthly and total volumes of water appropriated annually. A water use report will be sent to you each January for reporting the amounts for the previous year. The report must be submitted with a processing fee by February 15 each year. The report and fee must be submitted as long as the permit is active even if no water is used. Failure to submit the water use report and fee can result in the termination of your permit. Please do not send the report and fee until notified.

Please note the provision of your permit regarding wetlands not subject to DNR jurisdiction. You should contact your local unit of government (county, city or Soil and Water Conservation District) to determine your compliance with the Wetland Conservation Act of 1991. Your DNR permit does <u>not</u> authorize you to proceed with your project until you comply with the act.

If you have any questions, please contact Mark Rasmussen at (612) 297-3899 or your Area Hydrologist, Bill Huber at (612) 345-5601.

Sincerely,
DIVISION OF WATERS

John Linc Stine, Administrator
Permits and Land Use Section

c: Jim Cooper, Regional Hydrologist
Bill Huber, Area Hydrologist
Goodhue County SWCD
Data Systems

Department of Natural Resources
Division of Waters

WATER APPROPRIATION PERMIT

500 Lafayette Road
St. Paul, MN 55155-4032

AMENDED

PERMIT
69-0172
COUNTY
GOODHUE (25)

THIS AMENDED PERMIT SUPERSEDES THE ORIGINAL PERMIT AND ALL PREVIOUS AMENDMENTS.

IN THE MATTER OF THE APPLICATION FOR APPROPRIATION OF WATERS OF THE STATE, PERMISSION IS HEREBY GRANTED TO:

PERMITTEE	Authorized Agent
NORTHERN STATES POWER COMPANY	Gerald Joachim

Address
414 Nicollet Mall, Minneapolis, MN 55401-1927; Phone (612) 388-1121

To appropriate from:

Mississippi River (Basin 25-17P)

Point of Taking: E½, Section 5, T113N, R15W.

Purpose:

Operation of a nuclear steam electric generating plant.

Use Code (26)

Property described as:

Prairie Island Nuclear Power Plant located in the E½, Section 5, T113N, R15W.

Mississippi River Watershed (38)

Authorized Signature	Title Administrator	Date
John Linc Stine	Permits and Land Use Section	6/13/95

This permit is granted subject to the following **CONDITIONS:**

1. **QUANTITY:**
The Permittee is authorized to appropriate water at a rate not to exceed 630,000 gallons per minute. The total amount of water appropriated shall not exceed xxxx acre feet or 215,000 million gallons per year.

2. **LIMITATIONS:**
(a) Any violation of the terms and provisions of this permit and any appropriation of the waters of the state in excess of that authorized hereon shall constitute a violation of Minnesota Statutes, Chapter 103.
(b) This permit shall not be construed as establishing any priority of appropriation of waters of the state.
(c) This permit is permissive only. No liability shall be imposed upon or incurred by the State of Minnesota or any of its employees, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the Permittee relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the Permittee, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the Permittee, for violation of or failure to comply with the provisions of the permit or applicable provisions of law.
(d) In all cases where the doing by the Permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the Permittee, before proceeding therewith, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests necessary therefore.
(e) This permit shall not release the Permittee from any other permit requirements or liability or obligation imposed by Minnesota Statutes, Federal Law, or local ordinances relating thereto and shall remain in force subject to all conditions and limitations now or hereafter imposed by law.
(f) Unless explicitly specified, this permit does not authorize any alterations of the beds or banks of any public (protected) waters or wetlands. A separate permit must be obtained from the Department of Natural Resources prior to any such alteration.

(over, please)

PERMITTEE'S RESPONSIBILITIES:

(a) MONITORING.

The Permittee shall equip each installation for appropriating or using water with a device or employ a method to measure the quantity of water appropriated to within ten (10) percent of actual amount withdrawn unless otherwise specified by special provision.

(b) REPORTS.

Monthly records of the amount of water appropriated or used shall be recorded for each installation. Such readings and the total amount of water appropriated or used shall be reported annually to the Director of the Division of Waters, on or before February 15 of the following year, upon forms supplied by the Division. Any processing fee required by law or rule shall be submitted with the records whether or not any water was appropriated during the year. Failure to report shall be sufficient cause for terminating the permit 30 days following written notice.

(c) TRANSFER OR ASSIGNMENT.

Any transfer or assignment of rights, or sale of property involved hereunder shall be reported within 90 days thereafter to the Director of the Division of Waters. Such notice shall be made by the transferee (i.e., new owner) and shall state the intention to continue the appropriation as stated in the permit. This permit shall not be transferred or assigned except with the written consent of the Commissioner.

(d) MODIFICATION.

The Permittee must notify the Commissioner in writing of any proposed changes to the existing permit. This permit shall not be modified without first obtaining the written permission from the Commissioner.

4. **COMMISSIONER'S AUTHORITY:**

(a) The Commissioner may inspect any installation utilized for the appropriation or use of water. The Permittee shall grant access to the site at all reasonable times and shall supply such information concerning such installation as the Commissioner may require.

(b) The Commissioner may, as he/she deems necessary, require the Permittee to install gages and/or observation wells to monitor the impact of the Permittee's appropriation on the water resource and require the Permittee to pay necessary costs of installation and maintenance.

(c) The Commissioner may restrict, suspend, amend, or cancel this permit in accordance with applicable laws and rules for any cause for the protection of public interests, or for violation of the provisions of this permit.

5. **PUBLIC RECORD:**

All data, facts, plans, maps, applications, annual water use reports, and any additional information submitted as part of this permit, and this permit itself are part of the public record and are available for public inspection at the offices of the Division of Waters. The information contained therein may be used by the Division as it deems necessary. The submission of false data, statements, reports, or any such additional information, at any time shall be deemed as just grounds for revocation of this permit.

. **WETLAND CONSERVATION ACT:**

Where the work authorized by this permit involves the draining or filling of wetlands not subject to DNR jurisdiction, the permittee shall not initiate any appropriation under this permit until the permittee has obtained official approval from the responsible governmental unit as required by the Minnesota Wetland Conservation Act of 1991.

7. **FLOW METER:**

Minnesota Statutes require all installations for appropriating water to be equipped with flow meters, unless another method of measurement is approved by the Division of Waters.

8. **CONSERVATION:**

All practical and feasible water conservation methods and practices must be employed to promote sound water management and use the least amount of water necessary.

9. **COMPLIANCE:**

The permittee shall comply with all rules, regulations, requirements, or standards of the Minnesota Pollution Control Agency and other applicable federal, state or local agencies.

10. **INTAKE:**

All pump intakes must be screened to prevent fish from being drawn into the system.

11. **SUSPENSION:**

The Division of Waters may require the suspension of appropriation during periods of low water in order to maintain minimum water levels within the watershed.

c: James F. Cooper, Regional Hydrologist
Bill Huber, Area Hydrologist
Paul Voxland, Goodhue County SWCD
Data Systems

STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

PHONE NO. 507-285-7430

2300 Silver Creek Road N.E.
Rochester, Minnesota 55906

FILE NO.

April 22, 1993

Northern States Power Co.
Gerald Joachim, Prairie Island Plant
414 Nicollet Mall
Minneapolis, MN 55401-1927

Dear Mr Joachim:

AMENDED PERMIT 69-0172, Water Appropriation, Mississippi River, Goodhue County

Enclosed is *Amended Permit 69-0172* authorizing the appropriation of water from the Mississippi River for cooling water at the Prairie Island Nuclear Power Plant. This permit has been amended as per your request dated January 18, 1993, to increase the annual maximum appropriation from 190,000 million gallons per year (MGY) to 215,000 MGY.

Please read all permit conditions and limitations. As a condition of the permit, you will be required to install a flow meter and record monthly amounts of water appropriated. A water use report will be sent to you in January to report the amount of water appropriated for the previous year. The report must be submitted with a processing fee by February 15. Enclosed is a rate schedule that can be used to determine the fee. The report and fee must be submitted even if no water is used. Failure to submit the water use report and fee can result in the termination of your permit. Please do not send the report and fee until notified.

Please note the provision of your permit regarding wetlands not subject to DNR jurisdiction. You should contact your local unit of government (County, City, or Soil and Water Conservation District) to determine your compliance with the Wetland Conservation Act of 1991. Your DNR permit does <u>not</u> authorize you to proceed with your project until you comply with the Act.

Thank you for your cooperation. If you have any questions, please contact Area Hydrologist Bill Huber in the Lake City Area Office at phone number 612-345-5601.

Sincerely,

James F. Cooper
Regional Hydrologist

JFC/ms

Enc.

cc: Bill Huber, Area Hydrologist
Goodhue County Planning
St. Paul Waters, Permits
Data Systems
Goodhue County SWCD
Greg Turner, C.O.

AMENDED

WA-02628-02

Department of MINNESOTA Natural Resources
Division of Waters

WATER APPROPRIATION PERMIT

500 Lafayette Road
St. Paul, MN 55155-4032

PERMIT	69-0172
COUNTY	Goodhue

(THIS AMENDED PERMIT SUPERSEDES THE ORIGINAL PERMIT AND ALL PREVIOUS AMENDMENTS)

IN THE MATTER OF THE APPLICATION FOR APPROPRIATION OF WATERS OF THE STATE, PERMISSION IS HEREBY GRANTED TO:

PERMITTEE	Authorized Agent
Northern States Power Company	Gerald Joachim (612) 388-1121

Address

414 Nicollet Mall, Minneapolis, MN 55401-1927

To Appropriate From:

Mississippi River by means of pumps.

Point of Taking: E½ of Section 5, T113N, R15W, Prairie Island Nuclear Plant

Purpose

Operation of a nuclear steam electric generating plant.

Property Described as

Land owned: E½ of Section 5, T113N, R15W.

Authorized Signature	Title	Date
James F. Cooper	Regional Hydrologist	4/22/93

This permit is granted subject to the following **CONDITIONS:**

1. QUANTITY:
The permittee is authorized to appropriate water at a rate not to exceed 610,400 gallons per minute. The total amount of water appropriated shall not exceed * * * * * acre feet or 215,000 million gallons per year.

2. LIMITATIONS:
(a.) Any violation of the terms and provisions of this permit and any appropriation of the waters of the state in excess of that authorized hereon shall constitute a violation of Minnesota Statutes, Chapter 105.

(b.) This permit shall not be construed as establishing any priority of appropriation of waters of the state.

(c.) This permit is permissive only. No liability shall be imposed upon or incurred by the State of Minnesota or any of its employees, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the permittee relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the permittee, for any damage or injury resulting from any such act or omission, or as stopping or limiting any legal claim or right of action of the state against the permittee, for violation of or failure to comply with the provisions of the permit or applicable provisions of law.

(d.) In all cases where the doing by the permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the permittee, before proceeding therewith, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights and interests necessary therefore.

This permit shall not release the permittee from any other permit requirements or liability or obligation imposed by Minnesota Statutes, Federal Law or local ordinances relating thereto and shall remain in force subject to all conditions and limitations now or hereafter imposed by law.

(f.) Unless explicitly specified, this permit does not authorize any alterations of the beds or banks of any public (protected) waters or wetlands. A separate permit must be obtained from the Department of Natural Resources prior to any such alteration.

OVER

ATTACHMENT TO AMENDED PERMIT 69-0172

Additional Conditions:

6. The permittee shall comply with all rules, regulations, requirements, or standards of the Minnesota Pollution Control Agency and other applicable federal, state, or local agencies.

7. Minnesota Statutes require all permitted installations for appropriating water to be equipped with flow meters, unless another method of measurement is approved by the Division of Waters in writing.

8. All practical and feasible water conservation methods must be employed to promote sound water management and minimize water use.

9. Intake. All pump intakes must be screened to prevent fish from being drawn into the system.

10. Where the work authorized by this permit involves the draining, filling or burning of wetlands not subject to DNR jurisdiction, the permittee shall not initiate any work under this permit until the permittee has obtained official approval from the responsible governmental unit as required by the Minnesota Wetlands Conservation Act of 1991.

11. The permittee shall implement adequate soil and water conservation measures in order to protect water quality and prevent erosion and sedimentation.

12. The Division of Waters may require the suspension of appropriation during periods of low water in order to maintain a minimum flow in the river/watershed.

James F. Cooper, Regional Hydrologist

4/22/93
Date

RATE SCHEDULE FOR ANNUAL REPORT OF WATER USE FEES

The fees required with annual water use reports were changed by the 1990 Legislature. Fees are based on actual water use rather than the permitted amount of water. The following rate schedule can be used to determine water use fees. Please be sure to note any maximum fee limits that may apply.

[EXAMPLE: 234 million gallons appropriated is in the range 200 to 250 million gallons requiring a fee of $2.50 for each million gallons, therefore, the fee is $585.00 = $2.50 x 234]

VOLUME APPROPRIATED	FEE
0 to 50 million gallons	- $50.00 minimum fee
50 to 100 million gallons	- $1.00 for each million
100 to 150 million gallons	- $1.50 for each million
150 to 200 million gallons	- $2.00 for each million
200 to 250 million gallons	- $2.50 for each million
250 to 300 million gallons	- $3.00 for each million
300 to 350 million gallons	- $3.50 for each million
350 to 400 million gallons	- $4.00 for each million
Above 400 million gallons	- $4.50 for each million

MAXIMUM ANNUAL WATER USE FEES

$750 for any single agricultural irrigation permit
$35,000 for any single non-irrigation permit
$35,000 total for an entity with 3 or less permits
$50,000 total for an entity with 4 to 5 permits
$175,000 total for an entity with more than 5 permits
$175,000 total for a city of the first class

ONCE-THROUGH HEATING AND COOLING SYSTEMS ONLY

A separate annual water use fee schedule exists for once-through heating and cooling systems. The fee is 20 cents per 1,000 gallons ($200.00 per million gallons), with no maximum fee.

Non-profit corporations and school districts with once-through heating and cooling systems pay based on the following fee schedule:

* 5 cents per 1,000 gallons until 1993
* 10 cents per 1,000 gallons from 1993 to 1997
* 15 cents per 1,000 gallons from 1997 until 2010
* No maximum fee

PROCESSING FEE EXEMPTIONS

State and federal agencies are exempt from annual water use fees.

NA-02633-01
(W-147)
Rev. 4/72

Amended

PERMIT NO. 69-0172

☒ APPROPRIATION AND USE OF WATER

☐ WORK IN THE BEDS OF PUBLIC WATERS

HAS BEEN ISSUED TO

Northern States Power Co. (Applicant)

c/o Jim Bodensteiner

By The COMMISSIONER

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

EXPIRATION DATE N/A

POST CONSPICUOUSLY AT PROJECT SITE

STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES
500 Lafayette Road
PHONE NO. (507) 296-4800 St. Paul, MN 55155-4032 FILE NO.

July 20, 1992

Mr. Jim Bodensteiner
Northern States Power Company
414 Nicollet Mall
Minneapolis, MN 55401

Dear Mr. Bodensteiner:

**SUBJECT: AMENDED PERMIT 69-172,
APPROPRIATION FROM MISSISSIPPI RIVER, GOODHUE COUNTY**

Enclosed is Amended Permit #69-172 authorizing appropriation of water from the Mississippi River for cooling water at the Prairie Island Nuclear Power Plant. This permit has been amended as per your request dated February 10, 1992, to increase the annual maximum appropriation to 190,000 MGY from 173,000 MGY.

Please read all permit conditions and limitations. As a condition of the permit, you are required to install a flow meter to record the monthly and total volumes of water appropriated annually. A water use report will be sent to you each January for reporting the amounts for the previous year. The report must be submitted with a processing fee by February 15th each year. Please refer to the rate schedule enclosed to determine your annual water use fee. The report and fee must be submitted as long as the permit is active, even if no water is used. Failure to submit the water use report and fee can result in the termination of your permit. Please do not send the report and fee until notified.

If you have any questions regarding your permit, please contact Staff Hydrologist Mitch Shields in the Rochester Regional Office at (507) 285-7430.

Sincerely,

Paul T. Swenson
Acting Administrator
Permits and Land-use Section

PS:MS:nr

enclosures

c: Jim Haertel, Area Hydrologist
Greg Turner, Conservation Officer
Goodhue County SWCD
Goodhue County Zoning
Lake City Area Fisheries
Mark Heywood, Regional Fisheries
St. Paul Waters, Permits
Data Systems, St. Paul

NA-02628-02

MINNESOTA
Department of Natural Resources
Division of Waters

WATER APPROPRIATION PERMIT

500 Lafayette Road
St. Paul, MN 55155-4032

AMENDED

PERMIT	69-172
COUNTY	Goodhue

(THIS AMENDED PERMIT SUPERSEDES THE ORIGINAL PERMIT AND ALL PREVIOUS AMENDMENTS.)

IN THE MATTER OF THE APPLICATION FOR APPROPRIATION OF WATERS OF THE STATE, PERMISSION IS HEREBY GRANTED TO:

PERMITTEE	Authorized Agent
Northern States Power Company	Jim Bodensteiner (612) 330-6625

Address: 414 Nicollet Mall, Minneapolis, MN 55401

To Appropriate From: Mississippi River by means of pumps.

Point of taking: E½ of Section 5, T113N, R15W, Prairie Island Nuclear Power Plant.

Purpose: Operation of a nuclear steam electric generating plant.

Property Described as: Landowned: E½ of Section 5, T113N, R15W.

Authorized Signature	Title	Date
Paul T. Swenson	Acting Administrator Permits and Land-use	7-20-92

This permit is granted subject to the following **CONDITIONS:**

1. QUANTITY:
The permittee is authorized to appropriate water at a rate not to exceed 610,400 gallons per minute. The total amount of water appropriated shall not exceed * * * * acre feet or 190,000 million gallons per year.

2. LIMITATIONS:

(a) Any violation of the terms and provisions of this permit and any appropriation of the waters of the state in excess of that authorized hereon shall constitute a violation of Minnesota Statutes, Chapter 105.

(b) This permit shall not be construed as establishing any priority of appropriation of waters of the state.

(c) This permit is permissive only. No liability shall be imposed upon or incurred by the State of Minnesota or any of its employees, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the permittee relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the permittee, for any damage or injury resulting from any such act or omission, or as stopping or limiting any legal claim or right of action of the state against the permittee, for violation of or failure to comply with the provisions of the permit or applicable provisions of law.

(d) In all cases where the doing by the permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the permittee, before proceeding therewith, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights and interests necessary therefore.

(e) This permit shall not release the permittee from any other permit requirements or liability or obligation imposed by Minnesota Statutes, Federal Law, or local ordinances relating thereto and shall remain in force subject to all conditions and limitations now or hereafter imposed by law.

(f) Unless explicitly specified, this permit does not authorize any alterations of the beds or banks of any public (protected) waters or wetlands. A separate permit must be obtained from the Department of Natural Resources prior to any such alteration.

ATTACHMENT TO AMENDED PERMIT 69-172

Additional Conditions:

6. The permittee shall comply with all rules, regulations, requirements, or standards of the Minnesota Pollution Control Agency and other applicable federal, state or local agencies.

7. Minnesota Statutes require all permitted installations for appropriating water to be equipped with flow meters, unless another method of measurement is approved by the Division of Waters.

8. All practical and feasible water conservation methods must be employed to promote sound water management and use the least amount of water necessary.

9. The permittee shall implement adequate soil and water conservation measures in order to protect water quality and prevent erosion and sedimentation.

10. The Division of Waters may require the suspension of appropriation during periods of low water in order to maintain a minimum flow in the stream/watershed.

11. All pump intakes must be screened to prevent fish from being drawn into the system.

12. Where the work authorized by this permit involves the draining, filling or burning of wetlands not subject to DNR jurisdiction, the permittee shall not initiate any work under this permit until the permittee has obtained official approval from the responsible governmental unit as required by the Minnesota Wetlands Conservation Act of 1991.

Paul T. Swenson, Acting Administrator
Permits and Land-use

7-20-92
Date

RATE SCHEDULE FOR ANNUAL REPORT OF WATER USE FEES

The fees required with annual water use reports were changed by the 1990 Legislature. Fees are based on actual water use rather than the permitted amount of water. The following rate schedule can be used to determine water use fees. Please be sure to note any maximum fee limits that may apply.

[EXAMPLE: 234 million gallons appropriated is in the range 200 to 250 million gallons requiring a fee of $2.50 for each million gallons, therefore, the fee is $585.00 = $2.50 x 234]

VOLUME APPROPRIATED	FEE
0 to 50 million gallons	- $50.00 minimum fee
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MAXIMUM ANNUAL WATER USE FEES

$750 for any single agricultural irrigation permit
$35,000 for any single non-irrigation permit
$35,000 total for an entity with 3 or less permits
$50,000 total for an entity with 4 to 5 permits
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$175,000 total for a city of the first class

ONCE-THROUGH HEATING AND COOLING SYSTEMS ONLY

A separate annual water use fee schedule exists for once-through heating and cooling systems. The fee is 20 cents per 1,000 gallons ($200.00 per million gallons), with no maximum fee.

Non-profit corporations and school districts with once-through heating and cooling systems pay based on the following fee schedule:

* 5 cents per 1,000 gallons until 1993
* 10 cents per 1,000 gallons from 1993 to 1997
* 15 cents per 1,000 gallons from 1997 until 2010
* No maximum fee

PROCESSING FEE EXEMPTIONS

State and federal agencies are exempt from annual water use fees.

Northern States Power Company

414 Nicollet Mall
Minneapolis, Minnesota 55401-1927
Telephone (612) 330-5500

August 10, 1992

Mr. Mitch Shields
DNR Division of Waters
2300 Silver Creek Road NE
Rochester, Minnesota 59906

PRAIRIE ISLAND GENERATING PLANT
Water Appropriation Permit 69-172

As requested, enclosed is the description of the alternate flow measurement method utilized for river water appropriations under permit #69-172 at the Prairie Island Generating Plant. The description was filed with the DNR as required with the 1990 annual report of water use.

If there are any questions or concerns, please call me at 612-330-6625.

Sincerely,

Jim Bodensteiner
Sr. Plant Regulatory Analyst

JJB/hlf
piwtra.jjb
Attachment

cc: ERAD Record Center
Gerald Joachim
Lee Eberley (w/o attachment)

STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

PHONE NO. (507) 285-7430 2300 Silver Creek Road, N.E.
Rochester, MN 55906 FILE NO.

December 14, 1995

Northern States Power Company
c/o Mr. Jim Bodensteiner
414 Nicollet Mall
Minneapolis, MN 55401

Dear Mr. Bodensteiner:

SUBJECT: PERMIT 96-5042, WATER APPROPRIATION, ONE WELL, GOODHUE COUNTY

Enclosed is *Permit 96-5042* authorizing the appropriation of water from one well located in Section 5, T113N, R15W for the purpose of domestic use and lawn watering for training center at the Prairie Island Generating Plant.

Please read all permit conditions and limitations. As a condition of the permit, you will be required to install a flow meter and record monthly amounts of water appropriated. A water use report will be sent to you in January to report the amount of water appropriated for the previous year. The report must be submitted with a processing fee by February 15. Enclosed is a rate schedule that can be used to determine the fee. The report and fee must be submitted even if no water is used. Failure to submit the water use report and fee can result in the termination of your permit. Please do not send the report and fee until notified.

Please note the permit provision regarding wetlands not subject to DNR water permit jurisdiction. You should contact your local government unit (County, City, or Soil and Water Conservation District) to determine your compliance with the Wetland Conservation Act of 1991. Your DNR permit does <u>not</u> authorize you to proceed with your project until you comply with the Act.

Thank you for your cooperation. If you have any questions, please contact Regional Groundwater Specialist Jeff Green in the Rochester Area Office at the above number.

Sincerely,

James F. Cooper
Regional Hydrologist
Division of Waters

JFC/JAG/dsl

Enclosures

c: Bill Huber, Area Hydrologist
Gregory Turner, Conservation Officer
Lake City Area Fisheries
Rochester Area Wildlife
Goodhue County SWCD
Goodhue County Zoning
St. Paul Waters, Permits
Data Systems, St. Paul

i:\permits\fy'96\96-5042.a1

Minnesota Department of Natural Resources

WATER APPROPRIATION PERMIT

500 Lafayette Road
St. Paul, MN 55155-4032

PERMIT
96-5042
COUNTY
Goodhue

IN THE MATTER OF THE APPLICATION FOR APPROPRIATION OF WATERS OF THE STATE, PERMISSION IS HEREBY GRANTED TO:

PERMITTEE	Authorized Agent
Northern States Power Company	Mr. Jim Bodensteiner (612) 330-6625

Address (No. & Street, RFD, Box No. City, State, Zip Code)
414 Nicollet Mall, Minneapolis, MN 55401

To Appropriate From: One Well, 6 inch diameter, 154 feet deep.

Point of Taking: NE¼ NE¼ SW¼ Section 5, T113N, R15W

Purpose:
Domestic use and lawn watering for training center at the Prairie Island Generating Plant.

Property Described as:
SW¼ Section 5, T113N, R15W

Authorized Signature	Title	Date
James F. Cooper	Regional Hydrologist	12/14/95

This permit is granted subject to the following **CONDITIONS:**

1. **QUANTITY:**
   The Permittee is authorized to appropriate water at a rate not to exceed 80 gallons per minute. The total amount of water appropriated shall not exceed xxx acre feet or 4.7 million gallons per year.

2. **LIMITATIONS:**
   a. Any violation of the terms and provisions of this permit and any appropriation of the waters of the state in excess of that authorized hereon shall constitute a violation of Minnesota Statutes, Chapter 103.
   b. This permit shall not be construed as establishing any priority of appropriation of waters of the state.
   c. This permit is permissive only. No liability shall be imposed upon or incurred by the State of Minnesota or any of its employees, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the Permittee relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the Permittee, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the Permittee, for violation of or failure to comply with the provisions of the permit or applicable provisions of law.
   d. In all cases where the doing by the Permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the Permittee, before proceeding therewith, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights, and interests necessary therefore.
   e. This permit shall not release the Permittee from any other permit requirements or liability or obligation imposed by Minnesota Statutes, Federal Law, or local ordinances relating thereto and shall remain in force subject to all conditions and limitations now or hereafter imposed by law.
   f. Unless explicitly specified, this permit does not authorize any alterations of the beds or banks of any public (protected) waters or wetlands. A separate permit must be obtained from the Department of Natural Resources prior to any such alteration.

(OVER)

3. PERMITTEE'S RESPONSIBILITIES:
   a. MONITORING.
   The Permittee shall equip each installation for appropriating or using water with a device or employ a method to measure the quantity of water appropriated to within ten (10) percent of actual amount withdrawn unless otherwise specified by special provision.
   b. REPORTS.
   Monthly records of the amount of water appropriated or used shall be recorded for each installation. Such readings and the total amount of water appropriated or used shall be reported annually to the Director of the Division of Waters, on or before February 15 of the following year, upon forms supplied by the Division. Any processing fee required by law or rule shall be submitted with the records whether or not any water was appropriated during the year. Failure to report shall be sufficient cause for terminating the permit 30 days following written notice.
   c. TRANSFER OR ASSIGNMENT.
   Any transfer or assignment of rights, or sale of property involved hereunder shall be reported within 90 days thereafter to the Director of the Division of Waters. Such notice shall be made by the transferee (i.e., new owner) and shall state the intention to continue the appropriation as stated in the permit. This permit shall not be transferred or assigned except with the written consent of the Commissioner.
   d. MODIFICATION.
   The Permittee must notify the Commissioner in writing of any proposed changes to the existing permit. This permit shall not be modified without first obtaining the written permission from the Commissioner.

4. COMMISSIONER'S AUTHORITY:
   a. The Commissioner may inspect any installation utilized for the appropriation or use of water. The Permittee shall grant access to the site at all reasonable times and shall supply such information concerning such installation as the Commissioner may require.
   b. The Commissioner may, as he/she deems necessary, require the Permittee to install gages and/or observation wells to monitor the impact of the Permittee's appropriation on the water resource and require the Permittee to pay necessary costs of installation and maintenance.
   c. The Commissioner may restrict, suspend, amend, or cancel this permit in accordance with applicable laws and rules for any cause for the protection of public interests, or for violation of the provisions of this permit.

5. PUBLIC RECORD:
   All data, facts, plans, maps, applications, annual water use reports, and any additional information submitted as part of this permit, and this permit itself are part of the public record and are available for public inspection at the offices of the Division of Waters. The information contained therein may be used by the Division as it deems necessary. The submission of false data, statements, reports, or any such additional information, at any time shall be deemed as just grounds for revocation of this permit.

ADDITIONAL CONDITIONS

1. The permittee shall comply with all rules, regulations, requirements, or standards of the Minnesota Pollution Control Agency and other applicable federal, state, or local agencies.

2. The permittee shall notify the Commissioner prior to abandoning, removing, covering, plugging, or filling the well(s) from which the authorized appropriation was made. The well(s) must be abandoned by a licensed well driller and in accordance with the procedures required under Minnesota Health Department Rules (4725.2500 - 4725.2900).

3. Minnesota Statutes require all permitted installations for appropriating water to be equipped with flow meters, unless another method of measurement is approved by the Division of Waters.

4. If notified by the Division of Waters that well interference is suspected and probable from your appropriation, based on confirmation of a formal well interference complaint, all appropriation authorized by this permit must cease immediately until the interference is resolved.

5. The permittee may be required to obtain domestic well information within a radius of one and one-half miles of the production well should well interference problems develop.

6. All practical and feasible water conservation methods must be employed to promote sound water management and use the least amount of water necessary.

7. The permittee shall, whenever practical and feasible, employ water conservation methods and practices that promote sound water management, including but not limited to: reuse and recycling of water; conservation rate structures; water-saving devices; water scheduling; and public education.

8. Where the pumping authorized by this permit involves the surface or subsurface draining of wetlands not subject to DNR protected water permit jurisdiction, the permittee shall not initiate any work under this permit until the permittee has obtained official approval from the responsible local government unit as required by the Minnesota Wetland Conservation Act of 1991.

JFC/JAG/dsl

c: Bill Huber, Area Hydrologist
Gregory Turner, Conservation Officer
Lake City Area Fisheries
Rochester Area Wildlife
Goodhue County SWCD
Goodhue County Zoning
St. Paul Waters, Permits
Data Systems, St. Paul

NA-02633-01
(W-147)
Rev. 4/72

PERMIT NO. 96-5042

☒ APPROPRIATION AND USE OF WATER
☐ WORK IN THE BEDS OF PUBLIC WATERS

HAS BEEN ISSUED TO

Northern States Power Company (Applicant)

By The COMMISSIONER
MINNESOTA DEPARTMENT OF NATURAL RESOURCES

EXPIRATION DATE N/A

POST CONSPICUOUSLY AT PROJECT SITE

Northern States Power Company

414 Nicollet Mall
Minneapolis, MN 55401
Telephone (612) 330-6625

Water Appropriations permit
96-5042

October 27, 1995

Mr. Jim Cooper
Regional Hydrologist
Minnesota DNR, Region 5
2300 Silver Creek Road NE
Rochester, MN 55906

Dear Mr. Cooper,

NSP initiated flow monitoring of the well water supply to the training center on our Prairie Island Generating Plant site. As discussed with Area Hydrologist Bill Huber, recent review of monthly flows indicates that the annual appropriation and at times the daily appropriation rate trigger levels necessitating a permit. Therefore, we have prepared and are presently submitting for your review an application for a water appropriations permit for the well associated with the training center. Also included are the well log and 1995 monthly data and projections.

Your review of our application for permitting is appreciated. If there are any questions or concerns, please call me at 612-330-6625.

Sincerely,

Jim Bodensteiner
Senior Environmental Scientist

File Copy
ERAD
Record Center

encl: 1

c: ERAD Records Center
Gary Kolle

USE A TYPEWRITER OR A BALL POINT PEN WHEN COMPLETING THIS FORM. IF YOU ARE PRINTING, PRESS HARD SO THAT ALL COPIES CAN BE READ.

02623-02
(Rev. 6/87)

MINNESOTA
Department of Natural Resources
Division of Waters

BOX 32, 500 LAFAYETTE RD.
ST. PAUL, MN. 55155-4032
(612) 296-4800

OFFICE USE ONLY	P.A. No	
		Date(s) Served
	☐ SWCD	
	☐ WSD	
	☐ CITY	

PERMIT APPLICATION FOR APPROPRIATION OF WATERS OF THE STATE—NON-IRRIGATION

NOTICE OF WARNING: All information provided on this form is considered to be public information in accordance with the Minnesota Data Privacies Act (M.S. 15.1611 to 15.1698).

SEE INSTRUCTIONS... TYPE OR PRINT CLEARLY.

A

1. Applicant Name	2. Authorized Agent (if applicable)	3. Home Phone No.
Northern States Power Company		( )
4. Mailing Address	**5. City, State, Zip Code**	**6. Work Phone No.**
414 Nicollet Mall	Minneapolis, MN 55401	(612)330-6625

B

7. APPROPRIATION FOR: ("X" and fill in appropriate code)
- a. ☒ Waterworks(13)
- b. ☐ Power Generation( )
- c. ☐ Air Conditioning( )
- d. ☐ Industrial( )
- e. ☐ Temporary( )
- f. ☐ Water Level Maintenance( )
- g. ☒ Other domestic, lawn watering

8. Source of Water ("X" one and complete) ➤ Additional information MUST be supplied for each source. Refer to instructions (8&9) for requirements.
- a. ☒ One well
- b. ☐ ____ manifolded wells
- c. ☐ Stream, ditch, or river (name) ____
- d. ☐ Wetland, lake, or impoundment (name) ____
- e. ☐ Other ____

9. Point of Taking/Pumping Site
- a. NE 1/4 of NE 1/4 of SW 1/4
- b. Section No. 5
- c. Township No. 113N
- d. Range No. 15W
- e. County Goodhue

10. Means of Taking and Rate
- a. ☐ 1 (no.) stationary pump(s) at 80 gpm each
- ☐ ____ (no.) portable pump(s) at ____ gpm each
- c. ☐ Gravity Flow at ____ gpm/cfs
- d. ☐ Other ____ gpm/cfs (circle one)

11. Method of Measurement
- a. ☒ Flow Meter
- b. ☐ Timing Device
- c. ☐ Estimated Amount
- d. ☐ Electric Power Consumption
- e. ☐ Other ____

12. Means of Distribution
- a. ☒ pipe 2" diam 80' length
- b. ☒ tank 264 & 44.4 gal. capacity
- c. ☐ channel ____ length
- d. ☐ other ____

pressure

13. Legal Description-Land Owned/Rented*

Township No.	Range No.	Sect.	Fractional Sect. Gov't Lots
113N	15W	4	4, 5, 6
113N	15W	5	E½W½ part.
113N	15W	8	NW part.
113N	15W	9	NE part.

*Rental Agreement MUST Be Submitted

14. Months of Appropriation
☒ JAN ☒ MAY ☒ SEP
☒ FEB ☒ JUN ☒ OCT
☒ MAR ☒ JUL ☒ NOV
☒ APR ☒ AUG ☒ DEC

15. Schedule of Appropriation ("X" one and complete)
- a. ☒ Continuous 16 hrs./day 21 days/mo. 12 mo./yr.
- b. ☒ Seasonal
- c. ☐ Temporary

lawn watering
Beginning date May*
End date October*

(* Depending upon precipitation and temperature)

16. Total Annual Use (MGY): ~4.7

17. Discharge To and Quantity
- a. ☐ Stream, Ditch or River ____ (name) ( ) MGY
- b. ☐ Wetland, Lake, Impoundment ____ (name) ( ) MGY
- c. ☐ Sewer System ( ) MGY
- d. ☒ Other lawn & septic system (4.7) MGY

18. Discharge Point
- a. ____ 1/4 of NE 1/4 of SW 1/4
- b. Section No. 5
- c. Township No. 113N
- d. Range No. 15W
- e. County Goodhue

19. Means of Discharge and Rate
- a. ☐ ____ (no.) stationary pump(s) at ____ gpm each
- b. ☐ ____ (no.) portable pump(s) at ____ gpm each
- c. ☒ Gravity Flow at ____ gpm/cfs
- d. ☐ Other ____ gpm/cfs (circle one)

20. Additional Requirements:
- a. ☒ Map or Air Photo which shows:
  1) Point of Taking or Pumping Site
  2) Test Hole Location 3) Boundaries of Property Controlled and Area of Use 4) Discharge Point
- b. ☒ FILING FEE Payable to "DEPARTMENT OF NATURAL RESOURCES"
- c. ☐ Statement of Justification/Alternative Sources
- d. ☐ Additional Documents Required

C

➤ I hereby make application pursuant to Minnesota Statutes Chapter 105.41 and all supporting rules for a permit to appropriate water in accordance with all supporting maps, plans, and other information submitted with this application. The information submitted and statements made concerning this application are true and correct to the best of my knowledge.

STATE OF Minnesota

COUNTY OF Hennepin

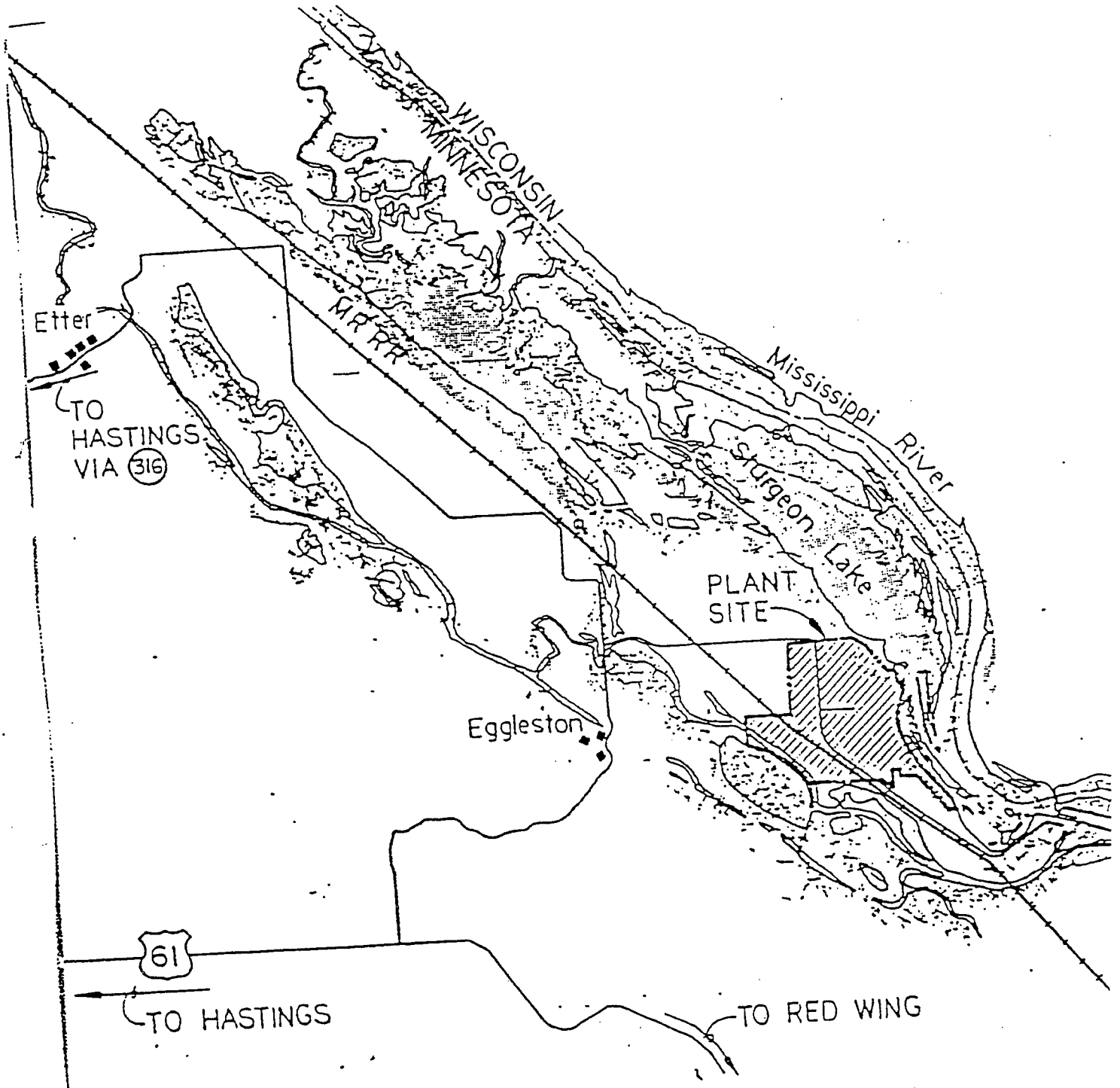
21. Applicant or Authorized Signature	22. Date
Michael L. Hestick	10/24/95

Subscribed and sworn to before me this 24th day of October 1995

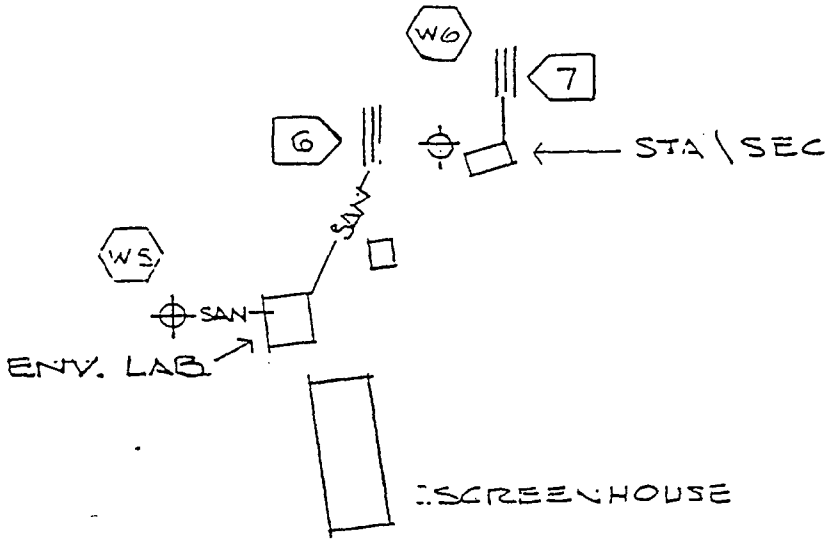
My commission expires Jan. 31, 2000

Signature of Notary Cynthia L. Waeger

CYNTHIA L. WAEGER
Notary Public-Minnesota
Hennepin County
My Comm Expires Jan 31, 2000



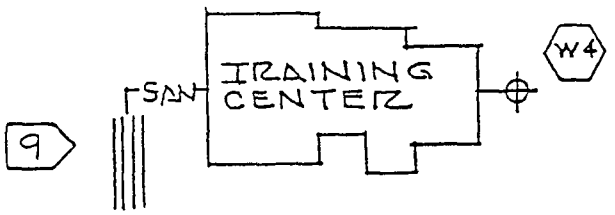
LOCATION MAP



NOTES:

W5 WELL-WATER SOURCE FOR SEPTIC SYSTEM 6

W6 WELL-WATER SOURCE FOR SEPTIC SYSTEM 7



NOTE:

W4 WELL-WATER SOURCE FOR SEPTIC SYSTEM 9

NPDS PERMIT APPLICATION ITEM 8B8

NSP - PRAIRIE ISLAND NUCLEAR PLANT

SCHEMETIC DIAGRAM - FLOW CHART
WATER SOURCE TO WASTE TREATMENT SYSTEM

			Training Center					
1995	Meter Reading		Total Gallons for the Month	Lawn Use for the Month	Building Use for the Month	Total to date for Year	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average
January	1723600		3.20E+04	0	3.20E+04	3.20E+04	3.84E+05	3.84E+05
February	1755600		4.81E+04	0	4.81E+04	8.01E+04	5.77E+05	4.81E+05
March	1803700		1.27E+05	0	1.27E+05	2.08E+05	1.53E+06	8.30E+05
April	1931100		6.68E+04	0	6.68E+04	2.74E+05	8.02E+05	8.23E+05
May	1997900		2.24E+05	0	2.24E+05	4.99E+05	2.69E+06	1.20E+06
June	2222300		1.03E+06	7.09E+05	3.21E+05	1.53E+06	1.24E+07	3.06E+06
July	3252400		1.05E+06	5.20E+05	5.33E+05	2.58E+06	1.26E+07	4.43E+06
August	4304900		5.58E+05	4.20E+05	1.38E+05	3.14E+06	6.69E+06	4.71E+06

Northern States Power Company

414 Nicollet Mall
Minneapolis, Minnesota 55401
Telephone (612) 330-5500

September 7, 1988

Minnesota Department of Natural Resources
Region 5
2300 Silver Creek Road N E
Rochester, Minnesota 55904
Attn: Jim Cooper

PRAIRIE ISLAND GENERATING PLANT
DNR Water Appropriation Permit 69-171-G
Application to Amend

Enclosed is an application to amend existing DNR water appropriation permit #69-171-G to include appropriations for a new well for air conditioning purposes and domestic uses in the proposed new administration building at NSP's Prairie Island Generating Plant, as described in the attached. Alternatives considered were air cooling and the existing well water system with conclusions as follows:

- Well water cooling is more efficient and less costly than air cooling.

- The existing well water system controls required for plant use are too complex and costly to tap into.

The cooling water will be discharged into the plant intake where it will supplement river water appropriated for plant use.

Also attached are a check for $30.00 to cover the application fee and a site plan indicating well and piping locations.

If there are any questions, please call me at 612-330-6625.

J J Bodensteiner
Assoc Regulatory Analyst

kd

cc D J Chmiel

Goodhue County Soil & Waste Conservation District
Route 1, Box 40F
Zumbrota, MN 55992

Tom Drake, Public Works Director
City Hall, Box 34
Red Wing, MN 55066

FILE
ERAD RECORD CENTER

NA-02623-01
(Rev. 4/83)

Department of MINNESOTA Natural Resources
Division of Waters

BOX 32, CENTENNIAL OFFICE BUILDING
ST. PAUL, MINNESOTA 55155
(612) 296-4800

OFFICE USE ONLY	P.A. No
	Date(s) Served
	☐ SWCD
	☐ WSD
	☐ CITY

PERMIT APPLICATION FOR APPROPRIATION OF WATERS OF THE STATE—NON-IRRIGATION

NOTICE OF WARNING: All information provided on this form is considered to be public information in accordance with the Minnesota Data Privacies Act (M.S. 15.1611 to 15.1698).

➤ SEE INSTRUCTIONS... TYPE OR PRINT CLEARLY.

A

1. Applicant Name: Northern States Power Company
2. Authorized Agent (if applicable):
3. Home Phone No.: ( )
4. Mailing Address: 414 Nicollet Mall
5. City, State, Zip Code: Minneapolis, MN 55401
6. Work Phone No.: (612) 330-6625

B

7. APPROPRIATION FOR: ("X" and fill in appropriate code)
a. ☐ Waterworks( )
b. ☐ Power Generation( )
c. ☒ Air Conditioning(31)
d. ☐ Industrial( )
e. ☐ Temporary( )
f. ☐ Water Level Maintenance( )
g. ☐ Other

8. Source of Water (X one and complete) ➤ Additional information MUST be supplied for each source. Refer to instructions (8&9) for requirements
a. ☒ One well
b. ☐ ____ wells manifolded together
c. ☐ Stream, ditch, or river (name)
d. ☐ Wetland, lake, or impoundment (name)
e. ☐ Other

9. Point of Taking/Pumping Site
a. SE ¼ of SE ¼ of NE ¼
b. Section No. 5
c. Township No. 113N
d. Range No. 15W
e. County Goodhue

10. Means of Taking and Rate
a. ☒ 1 (no.) stationary pump(s) at 300 gpm each
b. ☐ ____ (no.) portable pump(s) at ____ gpm each
c. ☐ Gravity Flow at ____ gpm/cfs
d. ☐ Other ____ gpm/cfs (circle one)

11. Method of Measurement
a. ☒ Flow Meter
b. ☐ Timing Device
c. ☐ Estimated Amount
d. ☒ Other Pump selected to meet requirements.

12. Means of Conveyance
a. ☒ pipe 4" diam 65' length
b. ☐ tank ____ gal. capacity
c. ☐ channel ____ length
d. ☐ other

13. Legal Description-Land Owned/Rented*

Township No.	Range No.	Sect.	Fractional Sect. Gov't Lots
113N	15W	4	4, 5, 6
113N	15W	5	E½

*Rental Agreement MUST Be Submitted

14. Months of Appropriation
☒ JAN ☒ MAY ☒ SEP
☒ FEB ☒ JUN ☒ OCT
☒ MAR ☒ JUL ☒ NOV
☒ APR ☒ AUG ☒ DEC

15. Schedule of Appropriation ("X" one and complete)
a. ☒ Continuous 24 hrs./day 30 days/mo. 12 mo./yr.
b. ☐ Seasonal
c. ☐ Temporary
Beginning date August 1989
End date

16. Total Annual Use (MGY): 81.5

17. Discharge To and Quantity
a. ☒ Stream, Ditch or River Mississippi (name) (60.5) MGY
b. ☐ Wetland, Lake, Impoundment ____ (name) ( ) MGY
c. ☒ Sewer System (21) MGY
d. ☐ Other ( ) MGY

18. Discharge Point
a. SE ¼ of SE ¼ of NE ¼
b. Section No. 5
c. Township No. 113N
d. Range No. 15W
e. County Goodhue

19. Means of Discharge and Rate
a. ☐ ____ (no.) stationary pump(s) at ____ gpm each
b. ☐ ____ (no.) portable pump(s) at ____ gpm each
c. ☒ Gravity Flow at 300-Summer gpm/cfs
d. ☐ Other 160-Winter gpm/cfs (circle one)

20. Additional Requirements: ("X" box for each submitted)
a. ☒ Map or Air Photo which shows:
1) Point of Taking or Pumping Site
2) Test Hole Location 3) Boundaries of Property Controlled and Area of Use 4) Discharge Point
b. ☒ FILING FEE Payable to "STATE TREASURER"
c. ☒ Statement of Justification/Alternative Sources See Cover Letter
d. ☐ Additional Documents Required

C

➤ I hereby make application pursuant to Minnesota Statutes Chapter 105.41 and all supporting rules for a permit to **appropriate** water in accordance with all supporting maps, plans, and other information submitted with this application. The information submitted and statements made concerning this application are true and correct to the best of my knowledge.

21. Applicant or Authorized Signature: James J. Bodenstein
22. Date: 9/7/88

STATE OF Minnesota
COUNTY OF Hennepin
Subscribed and sworn to before me this 7th day of September 1988
My commission expires 12/20/93
Signature of Notary: Sylvia M C Wilmo

SYLVIA M. WILMO
NOTARY PUBLIC—MINNESOTA
HENNEPIN COUNTY
My Commission Expires Dec. 20, 1993

➤ IMPORTANT: Submit this application and all supporting data to the DNR Regional Office serving you. (See back for addresses)
APPLICANT: KEEP YELLOW COPY FOR YOUR RECORDS

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES
CENTENNIAL OFFICE BUILDING · ST. PAUL, MINNESOTA · 55155

E. G. A. D. RECORDS CENTER
FEB 20 1976
RECEIVED REGULATORY ACTIVITIES
FEB 13 1976
FILE COPY
E. G. A. D. RECORDS CENTER

February 10, 1976

P.I. DNR

G. V. Welk, Assistant Manager
Regulatory Activities
Northern States Power Company
Minneapolis, Minnesota 55401

Dear Mr. Welk:

PERMITS 69-170 AND 69-172, MISSISSIPPI RIVER, GOODHUE COUNTY.

The Department of Natural Resources has reviewed the June 19, 1975 landscaping plan for the Prairie Island Generating Plant which NSP submitted in compliance with Condition VII of the subject permits. The plan is hereby approved.

Your company's concern and cooperation in developing this plan is noted with appreciation.

Sincerely yours,

DIVISION OF WATERS

Gerald D. Seinwill

Gerald D. Seinwill, Director

GDS:bsk
cc: Milt Krona

Bcc: P D Colgan 2/18/76
J M Pappenfus 2/18/76

W55-50
Rev. 67

Minnesota Conservation Department
DIVISION OF WATERS, SOILS AND MINERALS
Centennial Office Building
St. Paul, Minnesota 55101

August 19, 1971

ENGINEERING
VICE PRESIDENTIAL
STATE LETTER 40327

Northern States Power Company
414 Nicollet Mall
Minneapolis, Minnesota 55401

Attn: G. V. Welk

Re: Permit Number 69-171 G
Dated August 17, 1971

Enclosed is your copy of the permit authorizing appropriation of ground water by means of two existing wells, 20-10" diameter x 160' deep, pumping on an alternating schedule,

Goodhue---County

as set forth in the application or as modified to conform to general practices.

You are required by the terms of your permit to measure your appropriation of water and to report the amount annually to this division.

Measurements may be made either by a flow meter which measures directly the flow of water; or by use of a timing device which records the time during which a pump is operated. If the latter, the total number of hours of operation must be multiplied by the rated capacity of the pump in gallons per hour to determine the number of gallons pumped.

The records must be entered on the attached form for each calendar year, and mailed to the Division of Waters, Soils and Minerals by January 15 of the following year. Failure to make this report is sufficient reason for revoking the permit. Keep your permit effective by complying with all of the provisions thereof.

Your cooperation is solicited.

Yours very truly,

Eugene R. Gere

Director, Division of Waters, Soils and Minerals

Enc. Copy of Permit
W55a

W 80-59
Rev. 67

Minnesota Conservation Department
DIVISION OF WATERS, SOILS AND MINERALS
Centennial Office Building, St. Paul, Minnesota 55101

P.A. No. 69-171 G

IN THE MATTER OF THE APPLICATION OF Northern States Power Company

for a PERMIT TO APPROPRIATE GROUND WATER.

PERMIT

Pursuant to Minnesota Statutes, Chapter 105, and on the basis of statements and information contained in the permit application, letters, maps, and plans submitted by the applicant, and other supporting data, all of which are made a part hereof by reference,

PERMISSION IS HEREBY GRANTED to Northern States Power Company, Attn: Gary V. Welk, whose address for the purpose of notices and other communications pertaining to this permit is 414 Nicollet Mall, Mpls, Mn. 55401 subject to change by written notice from the permittee,

to appropriate ground water by means of two existing wells, 20-10" diameter x 160' deep, pumpin on alternating schedule,

located on property described as :

E½ Section 5, T. 113 N., R. 15 W.,

Goodhue------COUNTY

for the purpose of 100 gpm for plant sanitary facilities and 200 gpm for primary and secondary make-up at Prairie Island Nuclear Generating Plant.

This permit is granted subject to the following GENERAL and SPECIAL PROVISIONS:

GENERAL PROVISIONS

1. This permit shall not release the permittee from any liability or obligation imposed by Minnesota Statutes or local ordinances relating thereto and shall remain in force subject to all conditions and limitations now or hereafter imposed by law.
2. This permit is not assignable except with the written consent of the Commissioner of Conservation.
3. The Director of the Division of Waters, Soils and Minerals shall be notified at least five days in advance of the commencement of the work authorized hereunder.
4. No change shall be made, without written permission previously obtained from the Commissioner of Conservation, in the hydraulic dimensions, capacity or location of any items of work authorized hereunder.
5. The permittee shall grant access to the site at all reasonable times during and after construction to authorized representatives of the Commissioner of Conservation for inspection of the operation authorized hereunder.
6. This permit may be terminated by the Commissioner of Conservation, without notice, at any time he deems it necessary for the conservation of the water resources of the state, or in the interest of public health and welfare, or for violation of any of the provisions of this permit, unless otherwise provided in the Special Provisions.
7. In all cases where the doing by the permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements thereon or interests therein, the permittee, before proceeding therewith, shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all property, rights and interests necessary therefor.
8. This permit is permissive only. No liability shall be imposed upon or incurred by the State of Minnesota or any of its officers, agents or employees, officially or personally, on account of the granting hereof or on account of any damage to any person or property resulting from any act or omission of the permittee or any of its agents, employees, or contractors relating to any matter hereunder. This permit shall not be construed as estopping or limiting any legal claims or right of action of any person other than the state against the permittee, its agents, employees, or contractors, for any damage or injury resulting from any such act or omission, or as estopping or limiting any legal claim or right of action of the state against the permittee, its agents, employees, or contractors for violation of or failure to comply with the provisions of the permit or applicable provisions of law.
9. The permittee may appropriate ground water at a rate of 600 gallons per minute, except that during an emergency the rate may be increased to the capacity of the installed equipment. The total amount of water appropriated shall not exceed 969 acre feet or 315 million gallons per year.
10. Acceptance of the permit by the permittee shall constitute an agreement to all the provisions hereof and shall constitute consent to the Commissioner of Conservation and his authorized representatives to inspect, measure, and collect hydrologic or geologic data. Permittee at reasonable designated times shall pump his well or wells at a constant rate for the purpose of measuring and collecting hydrologic and hydraulic data regarding the water-bearing formation and the well.
11. The permittee shall have available for inspection and use of the Commissioner of Conservation or his agents at all times a continuous record of pumping operations entered on forms supplied by the Division of Waters, Soils and Minerals setting forth the dates, number of hours, and rates of pumping. On or before January 15 of each year, a notarized copy of such record for the preceding year shall be mailed to the Division of Waters, Soils and Minerals, Minnesota Conservation Department, St. Paul Minnesota, 55101.
12. The well shall be constructed with a circular opening at least two inches in diameter located at or near the top of the casing to permit water level measurements to be made. Construction of the circular opening shall be in conformance with the sanitary standards approved by the State Board of Health.
13. The permittee shall be jointly responsible with the contract well driller for compliance with the requirements for submission of well logs and test data to the Division of Waters, Soils and Minerals under Minnesota Statutes, Section 105.51, and shall inform the Director, Division of Waters, Soils and Minerals, of the name and address of the contractor five days before commencement of construction of the well.

SPECIAL PROVISIONS

I.

The well or wells, by means of which the water appropriation herein authorized is made possible, shall not be abandoned, removed, covered, filled, plugged, discontinued or have their pump settings changed without first notifying the Commissioner of Natural Resources and complying with his recommendations in carrying out the modification.

II.

To assure accurate records, the permittee shall equip the pump or pumps, by which appropriation is made under this permit, with a flow meter that will measure the quantity of water pumped to within two percent plus or minus of the actual flow. Monthly meter readings shall be recorded for each pump and these and the total amount of water appropriated under this permit shall be reported annually to the Director of the Division of Waters, Soils and Minerals on forms supplied herewith on or before January 15 of the following calendar year.

III.

The Commissioner of Natural Resources may review this permit from time to time as additional hydrologic data relating thereto become available. If at any time the Commissioner shall determine that the appropriation and use of water by the permittee hereunder is detrimental to the public interest, he may amend the same as he shall deem necessary in the public interest, giving the permittee reasonable time to alter the system to comply therewith.

DATED AT ST. PAUL, MINNESOTA, THIS 17th DAY OF

August 19 71

STATE OF MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

BY: [signature]

~~ROCKWOOD~~ DIVISION OF WATERS, SOILS and MINERALS

~~APPROVED:~~

~~Commissioner of Conservation~~

~~BY~~

~~Deputy Commissioner~~

			121/122 Deepwell Permit #69-0171										
2005	Beginning of Month 121 Deepwell Meter Reading	Beginning of Month 122 Deepwell Meter Reading	Months Gallons	Avg. gpm Limit = 600 gpm	Total to date for Year	Annual Limit = 3.15E8 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average		121 DEEPWELL MONTHS GALLONS	122 DEEPWELL MONTHS GALLONS		
January	48820800	62495000	2.50E+06	56	2.50E+06	**3.15E+08**	3.00E+07	3.00E+07	1	335600	2164600		
February	49156400	64659600	5.27E+06	131	7.77E+06	**3.15E+08**	6.32E+07	4.66E+07	2	3693000	1576300		
March	52849400	66235900	4.74E+06	106	1.25E+07	**3.15E+08**	5.69E+07	5.00E+07	3	4422700	319800		
April	57272100	66555700	5.68E+06	132	1.82E+07	**3.15E+08**	6.82E+07	5.46E+07	4	1041000	4642700		
May	58313100	71198400	3.86E+06	87	2.21E+07	**3.15E+08**	4.63E+07	5.29E+07	5	3709500	151900		
June	62022600	71350300	4.69E+06	109	2.67E+07	**3.15E+08**	5.63E+07	5.35E+07	6	2534200	2158400		
July	64556800	73508700	1.80E+06	40	2.86E+07	**5.00E+07**	2.16E+07	4.89E+07	7	164700	1638900		
August	64721500	75147600	3.10E+06	69	3.17E+07	**5.00E+07**	3.72E+07	4.75E+07	8	2042200	1057400		
September	66763700	76205000	2.37E+06	55	3.40E+07	**5.00E+07**	2.84E+07	4.54E+07	9	647600	1717400		
October	67411300	77922400	1.73E+06	39	3.57E+07	**5.00E+07**	2.08E+07	4.29E+07	10	181400	1549700		
November	67592700	79472100	2.12E+06	49	3.79E+07	**5.00E+07**	2.54E+07	4.13E+07	11	1092500	1023100		
December	68685200	80495200	2.90E+06	65	4.08E+07	**5.00E+07**	3.48E+07	4.08E+07	12	969000	1933400		
January	69654200	82428600											
								Year's Total =		20833400	19933600		
								Sum of 121 & 122 =		40767000			
Pumping Rate (gpm): 300 gpm (pump design flow)													
Flow Rate Meter with: Totalizer													

Screenhouse Cooling Water Permit #86-5114

2005	Beginning of Month Meter Reading		Months Gallons	Avg. gpm Limit = 50 gpm	Total to date for Year	Annual Limit = 2E7 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average			
January	34085200		1379000	31	1.38E+06	**2.00E+07**	1.65E+07	1.65E+07	1		
February	34261400		1379000	34	2.76E+06	**2.00E+07**	1.65E+07	1.65E+07	2		
March	34459900		1379000	31	4.14E+06	**2.00E+07**	1.65E+07	1.65E+07	3		
April	34672000		723065	17	4.86E+06	**2.00E+07**	8.68E+06	1.46E+07	4		
May	34695845		643400	14	5.50E+06	**2.00E+07**	7.72E+06	1.32E+07	5	4/8/05 totalizer replaced. New reading =	18699180
June	20041800		898000	21	6.40E+06	**2.00E+07**	1.08E+07	1.28E+07	6	5/2/05 reading =	19398400
July	20939800		659700	15	7.06E+06	**2.00E+07**	7.92E+06	1.21E+07	7		
August	21599500		1044900	23	8.11E+06	**2.00E+07**	1.25E+07	1.22E+07	8		
September	22644400		1033900	24	9.14E+06	**2.00E+07**	1.24E+07	1.22E+07	9		
October	23678300		851500	19	9.99E+06	**2.00E+07**	1.02E+07	1.20E+07	10		
November	24529800		1024300	24	1.10E+07	**2.00E+07**	1.23E+07	1.20E+07	11		
December	25554100		1039930	23	1.21E+07	**2.00E+07**	1.25E+07	1.21E+07	12		
January	26543500										
	Year's Total =		12055695								

Pumping Rate (gpm): 50 gpm (Pump design flow)

Flow Rate Meter with: Totalizer

tbsj01: Flow Meter bypassed. 1379000 gallons used was the average of June July and August of 2004.

NMC: Reading on 4/8/05 when totalizer was replaced

NMC: B29 minus 5/2/05 reading in N39

NMC: Sum of difference of old meter and difference of new meter

tbsj01:
Note from George Lenertz: The new meter went into service on 12/30/2005. No reading was taken of the gallons on the meter when placed in service. The water usage was 6-8 gpm. When I worked on the old main flow meter the meter to the vertical cooling water pumps was approximately 6 gpm and the old main meter was approximately 18 gpm. The old meter was removed from service on 1/3/2006 with its 18 gpm of flow being bypassed around the meter and not being recorded. Lynn Gunderson did the MOD for the new meter to the vertical cooling water pumps. Lynn provided the 12/30 information.
I added 50530 gallons to this total for the Annual water total due to the new meter being installed.
n

Cooling Tower Permit #78-5153

2005	Beginning of Month Meter Reading		Months Gallons	Avg. gpm Limit = 40 gpm	Total to date for Year	Annual Limit = 2.63E7 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average					
January	2994410		0	0	0.00E+00	**1.50E+07**	0.00E+00	0.00E+00	1				
February	2994410		0	0	0.00E+00	**1.50E+07**	0.00E+00	0.00E+00	2				
March	2994410		101040	2	1.01E+05	**1.50E+07**	1.21E+06	4.04E+05	3				
April	9774450		829060	19	9.30E+05	**1.50E+07**	9.95E+06	2.79E+06	4	Feb 24 - old meter removed, reading =			2994410
May	10603510		1108180	25	2.04E+06	**1.50E+07**	1.33E+07	4.89E+06	5	Feb 24 - new meter reading =			9673410
June	11711690		1152340	27	3.19E+06	**1.50E+07**	1.38E+07	6.38E+06	6				
July	12864030		837960	19	4.03E+06	**1.50E+07**	1.01E+07	6.91E+06	7				
August	13701990		1160000	26	5.19E+06	**1.50E+07**	1.39E+07	7.78E+06	8				
September	14861990		1087690	25	6.28E+06	**1.50E+07**	1.31E+07	8.37E+06					
October	15949680		553940	12	6.83E+06	**1.50E+07**	6.65E+06	8.20E+06					
November	16503620		0	0	6.83E+06	**1.50E+07**	0.00E+00	7.45E+06					
December	16503620		0	0	6.83E+06	**1.50E+07**	0.00E+00	6.83E+06					
January	16503620												
	Year's Total =		6830210										
Pumping Rate (gpm): 40 gpm (Pump desing flow)													
Flow Rate Meter with: Totalizer													

NMC: Meter replaced for calibration. Months gallons = B68-N69

NMC: Meter roll over so added 1 in front of meter reading for calculations

Administration Building

2005	Meter Reading		Months Gallons	Avg. gpm	Total to date for Year	Annual Limit = 1E6 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average	
January	7838600		39600	1	3.96E+04	**1.00E+06**	4.75E+05	4.75E+05	1
February	7878200		43800	1	8.34E+04	**1.00E+06**	5.26E+05	5.00E+05	2
March	7922000		47500	1	1.31E+05	**1.00E+06**	5.70E+05	5.24E+05	3
April	7969500		42300	1	1.73E+05	**1.00E+06**	5.08E+05	5.20E+05	4
May	8011800		75500	2	2.49E+05	**1.00E+06**	9.06E+05	5.97E+05	5
June	8087300		51400	1	3.00E+05	**1.00E+06**	6.17E+05	6.00E+05	6
July	8138700		33100	1	3.33E+05	**1.00E+06**	3.97E+05	5.71E+05	7
August	8171800		53000	1	3.86E+05	**1.00E+06**	6.36E+05	5.79E+05	8
September	8224800		48400	1	4.35E+05	**1.00E+06**	5.81E+05	5.79E+05	9
October	8273200		38900	1	4.74E+05	**1.00E+06**	4.67E+05	5.68E+05	10
November	8312100		46300	1	5.20E+05	**1.00E+06**	5.56E+05	5.67E+05	11
December	8358400		43300	1	5.63E+05	**1.00E+06**	5.20E+05	5.63E+05	12
January	8401700								
	Year's Total =		563100						

Pumping Rate (gpm):

Flow Rate Meter with: Totalizer

Training Center Permit #96-5042

2005	Meter Reading		Well Months Gallons	Avg. gpm Limit = 80 gpm	Well Total to date for Year	Well Annual Limit = 4.7E6 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average		Commercial & Institutional Use (Well Total minus Lawn Use)
January	24287200		74500	2	7.45E+04	**4.70E+06**	8.94E+05	8.94E+05	1	74500
February	24361700		85600	2	1.60E+05	**4.70E+06**	1.03E+06	9.61E+05	2	85600
March	24447300		70000	2	2.30E+05	**4.70E+06**	8.40E+05	9.20E+05	3	70000
April	24517300		64300	1	2.94E+05	**4.70E+06**	7.72E+05	8.83E+05	4	64300
May	24581600		61500	1	3.56E+05	**4.70E+06**	7.38E+05	8.54E+05	5	61500
June	24643100		124600	3	4.81E+05	**4.70E+06**	1.50E+06	9.61E+05	6	62600
July	24767700		244500	5	7.25E+05	**4.70E+06**	2.93E+06	1.24E+06	7	71500
August	25012200		387900	9	1.11E+06	**4.70E+06**	4.65E+06	1.67E+06	8	118900
September	25400100		443700	10	1.56E+06	**4.70E+06**	5.32E+06	2.08E+06	9	194100
October	25843800		241600	5	1.80E+06	**4.70E+06**	2.90E+06	2.16E+06	10	177000
November	26085400		70200	2	1.87E+06	**4.70E+06**	8.42E+05	2.04E+06	11	70200
December	26155600		77800	2	1.95E+06	**4.70E+06**	9.34E+05	1.95E+06	12	77800
January	26233400									
	Year's Total (well) =		1946200				Year's Total non-watering use =			1128000

Pumping Rate (gpm): 80 gpm (Pump design flow)

Flow Rate Meter with: Totalizer

Training Center - Lawn Watering - Landscaping Irrigation Permit #96-5042

2005	Meter Reading		Months Gallons	Avg. gpm	Total to date for Year	Well Annual Limit = 4.7E6 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average	
January	2215400		0	0	0.00E+00	**4.70E+06**	0.00E+00	0.00E+00	1
February	2215400		0	0	0.00E+00	**4.70E+06**	0.00E+00	0.00E+00	2
March	2215400		0	0	0.00E+00	**4.70E+06**	0.00E+00	0.00E+00	3
April	2215400		0	0	0.00E+00	**4.70E+06**	0.00E+00	0.00E+00	4
May	2215400		0	0	0.00E+00	**4.70E+06**	0.00E+00	0.00E+00	5
June	2215400		62000	1	6.20E+04	**4.70E+06**	7.44E+05	1.24E+05	6
July	2277400		173000	4	2.35E+05	**4.70E+06**	2.08E+06	4.03E+05	7
August	2450400		269000	6	5.04E+05	**4.70E+06**	3.23E+06	7.56E+05	8
September	2719400		249600	6	7.54E+05	**4.70E+06**	3.00E+06	1.00E+06	9
October	2969000		64600	1	8.18E+05	**4.70E+06**	7.75E+05	9.82E+05	10
November	3033600		0	0	8.18E+05	**4.70E+06**	0.00E+00	8.93E+05	11
December	3033600		0	0	8.18E+05	**4.70E+06**	0.00E+00	8.18E+05	12
January	3033600								
	Year's Total =		818200						

Pumping Rate (gpm): 80 gpm (Pump design flow)

Flow Rate Meter with: Totalizer

River Water Permit #69-0172

2005	Gallons from DMR	Evaporation	Total Months Gallons	Avg. gpm Limit = 630,000 gpm	Total to date for Year	Annual Limit = 2.15E11 Gallons	Projected Years Total Using This Months Total	Projected Years Total Using Monthly Average			Intake Screen Backwash
January	1.41E+10	7.75E+08	1.496900E+10	335327	1.50E+10	**2.35E+11**	1.80E+11	1.80E+11	1		6.20E+0
February	1.11E+10	7.00E+08	1.182300E+10	293229	2.68E+10	**2.35E+11**	1.42E+11	1.61E+11	2		5.60E+0
March	1.52E+10	7.75E+08	1.605700E+10	359700	4.28E+10	**2.35E+11**	1.93E+11	1.71E+11	3		6.20E+07
April	1.17E+10	7.50E+08	1.252700E+10	289977	5.54E+10	**2.35E+11**	1.50E+11	1.66E+11	4		6.00E+07
May	5.20E+09	7.75E+08	6.040000E+09	135305	6.14E+10	**2.35E+11**	7.25E+10	1.47E+11	5		6.20E+07
June	1.16E+10	7.50E+08	1.240600E+10	287176	7.38E+10	**2.35E+11**	1.49E+11	1.48E+11	6		6.00E+07
July	2.37E+10	7.75E+08	2.457200E+10	550448	9.84E+10	**2.35E+11**	2.95E+11	1.69E+11	7		6.20E+07
August	2.38E+10	7.75E+08	2.468000E+10	552867	1.23E+11	**2.35E+11**	2.96E+11	1.85E+11	8		6.20E+07
September	2.21E+10	7.50E+08	2.293800E+10	530972	1.46E+11	**2.35E+11**	2.75E+11	1.95E+11	9		6.00E+07
October	2.30E+10	7.75E+08	2.385200E+10	534319	1.70E+11	**2.35E+11**	2.86E+11	2.04E+11	10		6.20E+07
November	1.97E+10	7.50E+08	2.050900E+10	474745	1.90E+11	**2.35E+11**	2.46E+11	2.08E+11	11		6.00E+07
December	1.64E+10	7.75E+08	1.727700E+10	387030	2.08E+11	**2.35E+11**	2.07E+11	2.08E+11	12		6.20E+07
	Year's Total =		2.076500E+11	395072							

Pumping Rate (gpm): Use highest monthly daily average

Measurement method = Alternate Method

tbsj01: This value comes from plant engineering specifications. May have to be reevaluated at a future date. Assumptions are 2.0 MGD. 24/7 .

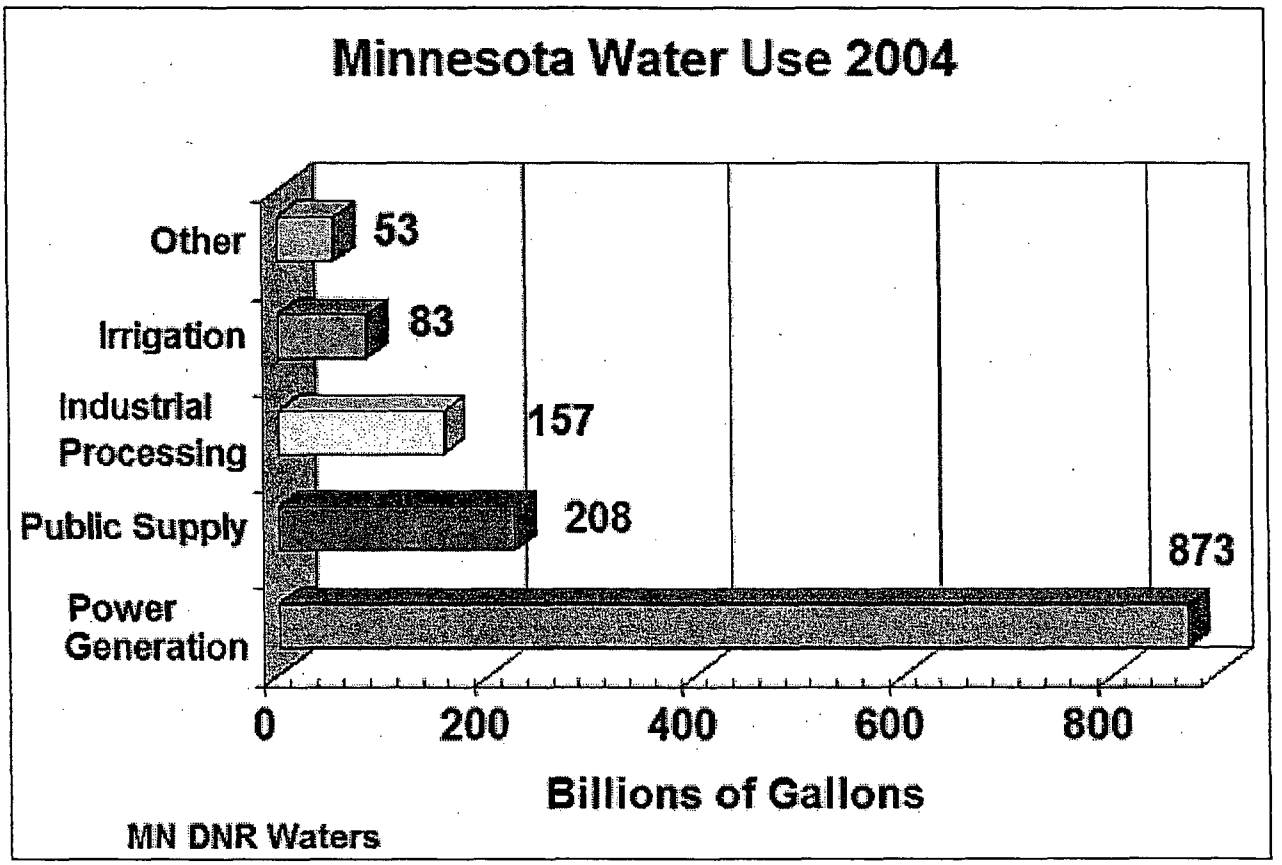
chapter 4

MNDNR 2005

Enter Keywords

Water use - Water Appropriations Permit Program

Minnesota water use data were gathered from permit holders who report the volume of water used each year.



Major Water Use Categories

Power Generation - water used to cool power generating plant equipment. This is historically the largest volume of use and relies almost entirely on surface water sources. Power Generation use is primarily non-consumptive, in that most of the water withdrawn is returned to its original source.

Public Supply - water distributed by community suppliers for domestic, commercial, industrial, and public users. The category relies on both surface and ground water sources.

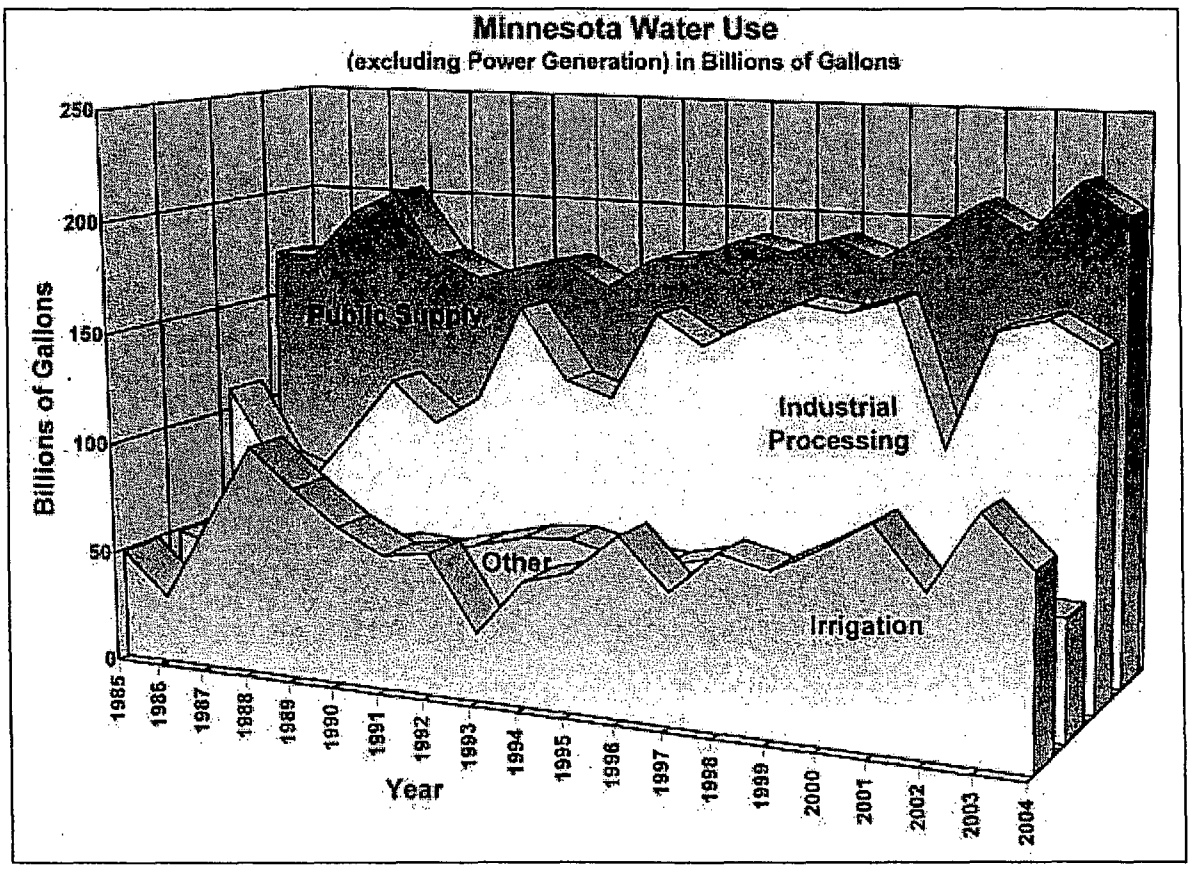
Industrial Processing - water used in mining activities, paper mill operations, food processing.

Three-fourths or more of withdrawals are from surface water sources.

Irrigation - water withdrawn from both surface water and ground water sources for major crop and noncrop uses. Nearly all irrigation is considered to be consumptive.

Other - water withdrawn for activities including air conditioning, construction dewatering, water level maintenance, and pollution confinement.

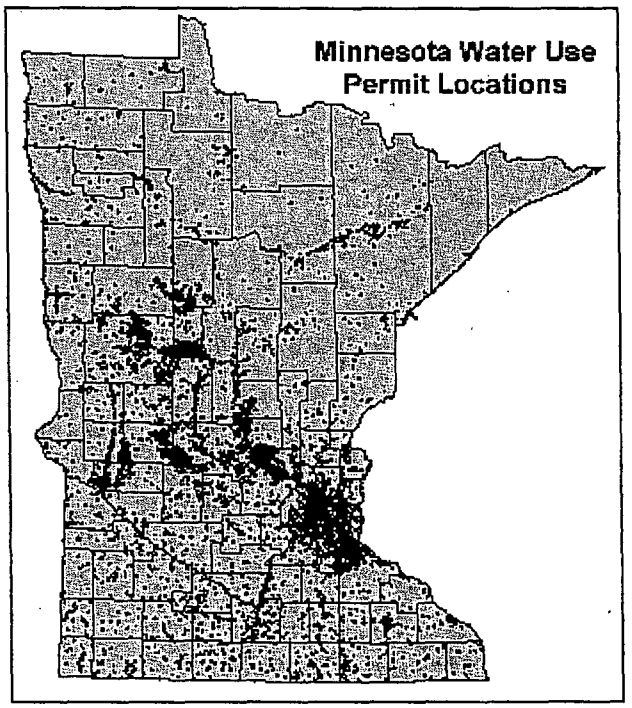
Consumptive use is defined as water withdrawn that is not directly returned to its original source. Under this definition, all ground water withdrawals are consumptive unless the water is returned to the aquifer from which it was obtained. Surface water withdrawals are considered consumptive if the water is not directly returned to the source so that it is available for immediate further use.



Active Permit Information

Permit information reports are generated directly from the main database files. The Permit Information Report was created 6/23/2005:

- Water use data 1988 to 2004
  - MS Excel 5.0 1.6 MB (stored as a ZIP file)
- Water use data 2000 to 2004 (PDF 1Mb each) sorted by
  - county, location
  - permit number
  - permit holder name



To download a larger copy of this map for plotting purposes, save this graphic to your hard drive.

- Permit Location Map - Large 24" x 27" [GIF/102Kb]

ArcView Shape File
The following compressed ZIP file contains ArcView shapefiles of water appropriation installation locations. The attribute data contain information on the permit number, location, use type, and resource used for each installation. Reported pumping data for 1988-2005 are included (created 9/12/2006).

- avswuds.zip 1443Kb

Other Resources

- USGS water use information (external link)
- USGS water use education (external link)

Back to top

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Appropriation Permit Index Notes

MN-DNR Water Appropriation permits are required for withdrawals greater than 10,000 gallons per day or one million gallons per year.

The permit index shows each installation of all active permits.
Use, agricultural acreage, permitted pumping rate (in gallons per minute) and permitted volume (in millions of gallons per year) are repeated for each installation, but pertain to the permit as a whole.

Blank values mean no reported pumping or no report.

Eight digit permit numbers (issued starting July 1999) are truncated to six digits for compatibility.
example: `2000-1234` is shown as `001234`

Down loaded 9/25/06

Water Appropriation Permit Index Key

Minnesota DNR Water Appropriation permits are required for withdrawals greater than 10,000 gallons per day or one million gallons per year.

Use Codes

WATERWORKS
211. Municipal
212. Private waterworks
(trailer courts, small housing units)
213. Commercial and Institutional
(business, industry, hospital)
214. Cooperative waterworks
215. Fire protection
216. Campgrounds, waysides, highway rest areas
217. Rural Water Districts
219. Waterworks

POWER GENERATION
221. Hydro power
222. Steam power cooling-once through
223. Steam power cooling-wet tower
224. Steam power cooling-ponds
225. Steam power-other than cooling
226. Nuclear power plant
229. Power generation

AIR CONDITIONING
231. Commercial building A/C
232. Institutions (school, hospital)
233. Heat pumps
234. Coolant pumps
235. District heating/cooling
239. Once-through heating or A/C
238. Air conditioning

INDUSTRIAL
241. Agricultural processing (food & livestock)
242. Pulp and paper processing
243. Mine processing (not sand & gravel washing)
244. Sand and gravel washing
245. Industrial process cooling once-through
246. Petroleum-chemical processing, ethanol
247. Metal processing
248. Non-metallic processing (rubber, plastic, glass)
249. Industrial processing

TEMPORARY (12 months or less)
251. Construction (non-dewatering)
252. Construction (dewatering)
253. Pipeline & tank testing
254. Landscape watering
255. Pollution containment
256. Water level maintenance
257. Livestock waste treatment
258. Temporary agricultural irrigation
259. Temporary

WATER LEVEL MAINTENANCE
261. Basin (lake) level
262. Mine dewatering
263. Quarry dewatering
264. Sand/gravel pit dewatering
265. Tile drainage and pumped sumps
266. Dewatering
269. Water level maintenance

SPECIAL CATEGORIES
271. Pollution containment
272. Aquaculture (hatcheries, fisheries)
273. Snow/Ice making
274. Peat fire control
275. Livestock watering
276. Pipeline and tank testing
277. Sewage treatment
279. Special categories

NON-CROP IRRIGATION
281. Golf course
282. Cemetery
283. Landscaping/athletic fields
284. Sod farm
285. Nursery
286. Orchard
289. Non-crop irrigation

MAJOR CROP IRRIGATION
290. Major crop irrigation
296. Wild rice irrigation

* indicates Multi-Use Permits

Resource Codes
1 - Ground Water
2 - Lake
3 - Stream/River
4 - Ditch
5 - Dug Pit/Holding Pond
6 - Quarry/Mine/Gravel Pit
7 – Wetland

Status Codes
1 - Active
2 - Standby
3 - Abandoned
4 - Terminated

Fee Codes
E - Exempt from Fees
N - Non-Profit

County Codes

1	Aitkin	30	Isanti	59	Pipestone
2	Anoka	31	Itasca	60	Polk
3	Becker	32	Jackson	61	Pope
4	Beltrami	33	Kanabec	62	Ramsey
5	Benton	34	Kandiyohi	63	Red Lake
6	Big Stone	35	Kittson	64	Redwood
7	Blue Earth	36	Koochiching	65	Renville
8	Brown	37	Lac Qui Parle	66	Rice
9	Carlton	38	Lake	67	Rock
10	Carver	39	Lake of the Woods	68	Roseau
11	Cass	40	Le Sueur	69	St. Louis
12	Chippewa	41	Lincoln	70	Scott
13	Chisago	42	Lyon	71	Sherburne
14	Clay	43	McLeod	72	Sibley
15	Clearwater	44	Mahnomen	73	Stearns
16	Cook	45	Marshall	74	Steele
17	Cottonwood	46	Martin	75	Stevens
18	Crow Wing	47	Meeker	76	Swift
19	Dakota	48	Mille Lacs	77	Todd
20	Dodge	49	Morrison	78	Traverse
21	Douglas	50	Mower	79	Wabasha
22	Faribault	51	Murray	80	Wadena
23	Fillmore	52	Nicollet	81	Waseca
24	Freeborn	53	Nobles	82	Washington
25	Goodhue	54	Norman	83	Watonwan
26	Grant	55	Olmsted	84	Wilkin
27	Hennepin	56	Otter Tail	85	Winona
28	Houston	57	Pennington	86	Wright
29	Hubbard	58	Pine	87	Yellow Medicine

Goodhue County

Permit #	Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
815157 -	2	PINE ISLAND, CITY OF	211	25	109	15	31	DBA	41	219919	1 CJDN		1,000	166.0	0.0		0.2	0.1	0.1	2
815157 -	3	PINE ISLAND, CITY OF	211	25	109	15	32	BBC	41	127299	1 OPDCCSTL		1,000	166.0	93.9	100.0	101.1	139.2	109.8	1
865060 -	1	LAND O LAKES INC	241	25	109	15	32	BDBA	41	227900	1 OPDCCSTL		600	85.0	9.7	8.6	10.3	139.3	109.9	1
620219 -	1	KENYON COUNTRY CLUB	281	25	109	18	3	BBC	41		3 ZUMBRO RIVER N FORK	22	140	7.0	5.8	5.0	3.0	4.7	3.3	1
795179 -	3	KENYON, CITY OF	211	25	109	18	3	BCBC	41	218916	1 CJDNCSTL		865	72.0	42.9	48.6	45.0	51.5	45.4	1
795179 -	1	KENYON, CITY OF	211	25	109	18	4	DDBC	41	228324	1 CJDN		865	72.0	[illegible]	11.8	16.0	[illegible]	19.1	1
610429 -	1	ZUMBROTA GOLF CLUB	281	25	110	16	25	A	41		1	42	70	6.8	2.4	1.3	1.6	6.8	4.1	1
845043 -	5	ZUMBROTA, CITY OF	211	25	110	16	25	CAD	41	241560	1 CJDN		2,200	220.0	37.8	31.6	35.9	34.9	54.2	2
845043 -	4	ZUMBROTA, CITY OF	211	25	110	16	25	CDB	41	218921	1 CJDN		2,200	220.0	49.5	54.3	35.1	35.2	47.8	1
855101 -	1	MAPLE ISLAND INC	241	25	110	16	30	BBC	41	229838	1		225	90.0	2.5	1.3	2.0	0.8	0.7	1
680181 -	2	WANAMINGO, CITY OF	211	25	110	16	30	CAD	41	489233	1 CJSL		650	60.0	42.6	43.3	39.0	33.9	32.1	1
680181 -	1	WANAMINGO, CITY OF	211	25	110	16	30	CCBB	41	218585	1 CJDN		650	60.0	0.3	0.1	0.0	0.1	0.0	2
845043 -	3	ZUMBROTA, CITY OF	211	25	110	16	36	BDAD	41	228317	1 CJDNCSTL		2,200	220.0	102.1	101.2	98.6	108.4	65.8	1
775150 -	1	WILKUS, JAMES L	290	25	110	17	29	DCC	41		1 OPDCCJDN	400	1,200	60.5						1
005046 -	1	FELTON, DOUGLAS A	290	25	110	18	22	ACA	39	626606	1 OPDC	140	550	30.5	3.5	14.5	5.7	18.9		1
034212 -	1	FITSCHEN BROTHERS	275	25	111	14	1	DAA	38	256052	1		25	10.0						1
765108 -	2	BELLCHESTER, CITY OF	211	25	111	14	32	D	41	240638	1		300	7.3						3
765108 -	4	BELLCHESTER, CITY OF	211	25	111	14	32	DAAA	41	535064	1 CFRNCIGL		300	7.3	3.7	3.4	3.6	4.1	4.5	1
765108 -	3	BELLCHESTER, CITY OF	211	25	111	14	32	DDDD	41	120020	1 CFRN		300	7.3	4.3	0.8	0.5	3.1	2.9	1
034180 -	1	CLAY VIEW DAIRY LLP	275	25	111	15	10	DCBB	38	570708	1 OPDCCJDN		18	146.0	8	4.2	4.1	11.2	11.0	1
755082 -	1	GOODHUE, CITY OF	211	25	111	15	21	CAC	41	435180	1 CJDN		630	40.0	33.9	33.0	28.8	31.8	31.1	1
755082 -	3	GOODHUE, CITY OF	211	25	111	15	21	CAC	41	509078	1 CFRNCIGL		630	40.0	0.1	0.4	0.4	1.0		1
755082 -	2	GOODHUE, CITY OF	211	25	111	15	21	CDB	41	240107	1 OPDC		630	40.0						1
025064 -	1	D & T ENTERPRISES OF MN INC	290	25	111	18	7	BAC	39	664104	1 OPDC	130	700	35.0	34	33.4	29.7	32.8	31.1	1
815010 -	1	DENNISON, CITY OF	211	25	111	18	19	CBBC	39	161410	1 CJDN		300	13.0	8.3	5.0	5.1	5.8	5.4	1
905075 - POND1		LAKE CITY COUNTRY CLUB	281	25	112	12	31	BDAA	38		5	34	400	36.0					19.8	1
905075 -	1	LAKE CITY COUNTRY CLUB	281	25	112	12	31	BDAC	38	242867	1 QUUU	34	400	36.0	34.5	30.6	25.8	32.8	21.4	1
905067 -	1	PRAIRIE ISLAND INDIAN COMMUNITY	281	*25	112	13	9	CDCC	38	218606	1 CPCRCMTS	30	450	37.0	32.5	31.0	42.0	39.0	27.5	1
905067 - POND1		PRAIRIE ISLAND INDIAN COMMUNITY	281	*25	112	13	17	AD	38		5	30	450	37.0						1
905067 - POND2		PRAIRIE ISLAND INDIAN COMMUNITY	281	*25	112	13	17	AD	38		5	30	450	37.0						1
905067 - POND3		PRAIRIE ISLAND INDIAN COMMUNITY	281	*25	112	13	17	AD	38		5	30	450	37.0						1
765086 -	8	RED WING, CITY OF	211	25	112	14	6	DBB	38	151565	1 CMTSPMFL		1,500	675.0	161.3	180.6	169.6	221.7	185.2	1
985081 -	1	AGGREGATE INDUSTRIES-NCR INC	244	25	112	15	6	DAC	39		6		400	35.0						1
785084 -	1	NELSON, CARL A	290	25	112	17	5	ABCC	39	162662	1 OPDCCJDN	111	800	28.0	5.1	15.4	0.1	21.2	0.0	1
775102 -	1	GESME, KEITH	290	25	112	17	5	CBBA	39	255862	1	190	800	61.9	24.0	38.4	92.1	20.7	47.5	1
775070 -	1	DUNKER, DENNIS D	290	25	112	17	6	BDB	39	250754	1	40	600	15.3	5.0	7.6	2.6	8.3	4.1	1
855058 -	4	CANNON FALLS, CITY OF	211	25	112	17	7	ACC	39	556643	1 QBAA		4,050	260.0	82.1	107.5	86.3	73.3	49.9	1
855058 -	3	CANNON FALLS, CITY OF	211	25	112	17	7	BDD	39	433273	1 CJDN		4,050	260.0	61.3	60.8	55.7	45.7	66.0	1
855058 -	5	CANNON FALLS, CITY OF	211	25	112	17	7	BDD	39	596648	1 CJSL		4,050	260.0	72.1	84.5	80.3	80.0	78.0	1
795030 -	1	KIMMES, DAVID	290	25	112	17	14	BDCC	39	142067	1 OPDCCJDN	113	800	43.0		10.6		9.2		1
855058 -	1	CANNON FALLS, CITY OF	211	25	112	17	18	ACD	39	218620	1 CJDNCFRN		4,050	260.0						2
855058 -	2	CANNON FALLS, CITY OF	211	25	112	17	18	DABD	39	228339	1 CJDNCSTL		4,050	260.0						3
775260 -	1	DOFFING, CLARENCE	290	25	112	18	13	ABB	39		3 CANNON	69	500	8.6	15.5	27.0	13.5	2.8	19.8	1
765077 -	1	RAUVOLA, CURTIS	290	25	112	18	16	CBCA	39	162671	1 OPDCCJDN	280	600	80.0	15.5	27.0	13.5	2.8	19.8	1
905072 -	1	RAUVOLA, CURTIS	290	25	112	18	17	AAA	39	506613	1 OPGWOPDC	200	800	55.0	16.6	28.7	16.0	2.9	25.4	1
775173 -	1	DEVNEY, MICHAEL AND EILEEN	290	25	112	18	18	BDDB	39	255378	1 OPDCCJDN	116	800	37.8	15.9	29.5	9.6	30.0	24.0	1
775041 -	1	ENDRES FARMS PARTNERSHIP	290	25	112	18	18	CAD	39	251445	1	120	800	41.0	9.3	25.7	11.1	39.9	23.7	1
765101 -	1	ANDERSON, ARCHIE N	290	25	112	18	19	DCDD	39	218731	1 OPDCCJDN	120	1,100	40.0	1.8	7.5	2.0	14.0	3.7	1
775182 -	1	NELSON, NORRIS Y	290	25	112	18	20	CD	39		1	160	1,500	53.3						1
955021 -	1	D & T ENTERPRISES INC	290	25	112	18	20	DAAA	39	526966	1 OPDC	250	1,400	67.9	63.7	51.5	14.8	63.0	39.6	1

9.6 MGYR

DNR Water Appropriation Permits — Active Permits - By County & Location

6/23/2005

Goodhue County

Permit # Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Permitted Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
815118 - 1	ROBINSON, GARY D	290	25	112	18	21	AB	39		3 PRAIRIE CREEK	95	450	7.8						1
915011 - 1	OTTE ENTERPRISES INC	290	25	112	18	21	BCA	39	466770	1 OPDC	120	800	32.6	16.9	22.7	13.0	22.7	19.5	1
995010 - 1	SUMMIT GOLF CLUB	281	25	112	18	23	CAAD	39	618204	1 OPDC	100	800	67.0	43.7	36.3	32.4	48.8	37.2	1
865070 - 1	HOLDENS FOUNDATION SEEDS	290	25	112	18	28	BAD	39		3 PRAIRIE CREEK	60	197	6.5						1
915057 - 1	HOLDENS FOUNDATION SEEDS	290	25	112	18	28	BADB	39	464094	1 OPDC	80	700	30.0	1.7	4.0	1.3	1.7		1
915119 - 1	MULVIHILL, GLENN AND BONNIE	290	25	112	18	30	ABDD	39	466769	1 OPDC	135	900	50.0	10.3	29.6	23.0	34.5	34.6	1
845060 - 1	SYNGENTA SEEDS INC	290	25	112	18	30	BCDD	39	233949	1	160	850	27.0	2.1	12.4	4.2	19.6	3.0	1
731250 - 1	SYNGENTA SEEDS INC	213	25	112	18	30	CDCD	39	232101	1 CJDN		350	3.5	2.8	2.6	2.1	2.0	2.4	1
845059 - 1	SYNGENTA SEEDS INC	290	25	112	18	30	DCCC	39	186308	1 OPDCCJDN	120	1,000	20.0	0.4	2.1	0.1	3.2	0.3	1
775040 - 1	FELTON, DOUGLAS AND NORA	290	25	112	18	31	BDB	39	251232	1	145	800	47.2	8.1	23.7	9.1	30.8	13.6	1
895063 - 1	EMERY, BRIAN	290	25	112	18	31	DCBA	39	451549	1 OPDC	247	700	82.0	2.9	10.4	2.0	16.2	10.3	1
895164 - 1	RED WING, CITY OF	283	25	113	14	28	BDCB	38		3 MISSISSIPPI	25	400	5.4	0	0	0	0	0	1
865027 - 1	MN DEPT OF CORRECTIONS	213	25	113	14	28	DCA	38	251920	1		710	10.0	2.5	2.9	2.5	1.2	0.4	1E
865027 - 2	MN DEPT OF CORRECTIONS	213	25	113	14	28	DCA	38	251921	1		710	10.0	6.8	9.7	8.8	2.2	1.1	1E
765136 - 2	NSP CO DBA XCEL ENERGY	222	25	113	14	29	AACB	38		3 MISSISSIPPI		38,900	16,000.0	749.9	770.3	757.1	644.6	768.0	1
765136 - 3	NSP CO DBA XCEL ENERGY	222	25	113	14	29	AACB	38		3 MISSISSIPPI		38,900	16,000.0						1
765136 - 4	NSP CO DBA XCEL ENERGY	222	25	113	14	29	AACB	38		3 MISSISSIPPI		38,900	16,000.0						1
765136 - 5	NSP CO DBA XCEL ENERGY	222	25	113	14	29	AACB	38		3 MISSISSIPPI		38,900	16,000.0						1
765086 - 4	RED WING, CITY OF	211	25	113	14	29	ABDC	38	219011	1 CMTS		1,500	675.0	127.0	110.1	110.0	102.8	115.8	1
765136 - 1	NSP CO DBA XCEL ENERGY	222	25	113	14	29	B	38		3 MISSISSIPPI		38,900	16,000.0	15,255.8	14,611.1	14,845.3	15,042.1	15,570.4	1
590889 - 1	RED WING, CITY OF	277	25	113	14	29	BBAA	38	218529	1 CDRE		50	8.8	0.7	0.7	0.7	0.7	0.1	1
640052 - 1	ARCHER DANIELS MIDLAND CO	241	*25	113	14	30	AADD	38	218621	1 CIGLPMFL		250	85.0	44.8	69.2		52.3		3
640052 - 2	ARCHER DANIELS MIDLAND CO	241	*25	113	14	30	AADD	38	255893	1 CIGLPMRC		250	85.0			48.6		75.2	1
765086 - 1	RED WING, CITY OF	211	25	113	14	30	ACCC	38	216012	1 CECRCMTS		1,500	675.0	61.8	59.2	45.7	72.5	69.4	1
765086 - 2	RED WING, CITY OF	211	25	113	14	30	ACCC	38	216017	1 CECRCMTS		1,500	675.0	41.1	59.1	50.0	63.0	43.5	1
895165 - 1	RED WING, CITY OF	283	25	113	14	30	ACD	38		3 MISSISSIPPI	4	400	0.9	0	0	0	0	27.0	1
905015 - 1	RED WING, CITY OF	289	25	113	14	30	BCA	38		3 MISSISSIPPI	15	400	3.3	0	0	0	0	0	1
905013 - 1	RED WING COUNTRY CLUB	281	25	113	14	31	BBDA	38	443879	1 CIGLCECR	70	300	49.5	23.4	19.2	15.2	24.3	19.5	1
765086 - 7	RED WING, CITY OF	211	25	113	14	31	CCDC	38	216020	1 CECRCMTS		1,500	675.0	160.9	173.2	199.3	143.6	159.5	1
765086 - 3	RED WING, CITY OF	211	25	113	14	32	ADAA	38	218623	1 CECRPMFL		1,500	675.0	87.7	65.5	49.5	67.1	50.1	1
720021 - 2	USG INTERIORS INC	248	25	113	14	34	BAA	38	249434	1		400	30.0		13.4	10.5	10.8	12.4	2
720021 - 1	USG INTERIORS INC	248	25	113	14	34	BAAC	38	218624	1 QWTA		400	30.0	0.0					3
720021 - 3	USG INTERIORS INC	248	25	113	14	34	BAAC	38	248808	1 CMTS		400	30.0	14.4	0.0	5.2	0.2	0.2	1
865046 - 1	RED WING, CITY OF	281	25	113	14	34	BABC	38	416008	1 CIGLCECR	45	600	25.0	18.8	15.2	10.2	20.3	18.3	1
935063 - 1	RED WING, CITY OF	281	25	113	14	34	CBA	38	466289	1		250	15.0	5.5	5.1	3.4	7.3	4.2	1
995035 - 1	RED WING, CITY OF	281	25	113	14	34	DCB	38	601313	1 CMTS	30	280	16.5	12.2	7.1	4.5	8.7	7.4	1
690171 - 121	NSP CO DBA XCEL ENERGY	226	25	113	15	5	ACDA	38	256120	1		600	50.0	13.6	16.9	18.9	10.6	18.5	1
690171 - 122	NSP CO DBA XCEL ENERGY	226	25	113	15	5	ACDD	38	256121	1		600	50.0	12.8	16.3	11.6	14.2	13.3	1
690172 - 1	NSP CO DBA XCEL ENERGY	226	25	113	15	5	ADD	38		3 MISSISSIPPI		630,000	235,000.0	211,164.0	205,615.0	200,408.0	192,790.0	184,630.0	3
865114 - 1	NSP CO DBA XCEL ENERGY	229	25	113	15	5	ADDC	38	402599	1 QWTA		50	20.0	7.4	7.2	4.2	10.9	15.5	1
965042 - 1	NSP CO DBA XCEL ENERGY	213	*25	113	15	5	CAAD	38	256074	1 QBUA	2	80	4.7	2.2	2.9	1.6	1.8	1.8	1
785153 - 1	NSP CO DBA XCEL ENERGY	226	25	113	15	5	DAAD	38	170894	1 QWTA		40	15.0	3.7	3.6	3.5	4.1	5.2	3
785153 - 2	NSP CO DBA XCEL ENERGY	226	25	113	15	5	DAAD	38	611076	1 QWTA		40	15.0						1
845092 - 1	HANSON, RONALD	290	25	113	15	6	ACB	38		2 LARSON LAKE	25	500	6.7	1.3	1.5	0.5	3.2	1.0	1
681541 - 5	S B FOOT TANNING CO	249	25	113	15	25	CDBC	38	218626	1 CECRPMFL			24.0	2.9	3.8	4.6	7.6		1
681541 - 4	S B FOOT TANNING CO	249	25	113	15	25	CDCA	38	219015	1 CECRCMTS			24.0	12.0	9.5	8.8	10.7		1
765086 - 5	RED WING, CITY OF	211	25	113	15	27	BACB	39	219016	1 CECRCMTS		1,500	675.0						1
600920 - 1	CENTRAL RESEARCH LABORATORIES INC	213	25	113	15	29	ACAC	39	218627	1 CFRNPMFL		300	1.5	0.4	0.5	0.4	0.3	0.3	1
660691 - 1	S B FOOT TANNING CO	248	25	113	15	36	CBC	38		1 CECRPMFL		1,600	175.0						3
660691 - 2	S B FOOT TANNING CO	248	25	113	15	36	CBCB	38	218628	1 CECRPMFL		1,600	175.0	53.6	48.4	41.3	48.6	49.3	2
														4,790	710	676	642.9	707.7	653.5
														9.6	0	0	0	0	27.0

15.7 78.5 68.2

100 204.7 154.7 MG

6 WD Red Wing Total

Goodhue County

Permit # Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Permitted Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
660691 - 3	S B FOOT TANNING CO	248	25	113	15	36	CBDB	38	218629	1 CECRPMFL		1,600	175.0	69.7	54.2	49.4	59.9	62.8	1
765123 - 1	RIES, NICK	290	25	113	16	5	CDB	38		1	170	800	65.0	28.0	10.0	12.0	20.0	36.0	1
895128 - 1	FOX, GERALD	290	25	113	16	6	ABDD	38	457176	1 OPDC	125	800	27.7	12.3	25.8	7.9	19.4	21.1	1
775194 - 1	RIES, NICK	290	25	113	16	7	AAA	38		1	110	800	42.0	24.0	9.0	10.0	20.0	33.0	1
775072 - 1	KOCUR, FLORENCE	290	25	113	16	17	DBB	39		1	120	800	45.0		7.3		12.9		1
775124 - 1	FOX, GERALD	290	25	113	16	17	DDAA	39	120153	1 OPDCCFRN	200	500	45.0	13.7	29.1	9.7	22.6	20.6	1
710995 - 1	WELCH VILLAGE SKI AREA INC	273	25	113	16	27	CBA	39		3 CANNON RIVER		5,000	50.0	28.5	13.0	47.1	42.9	48.1	1
651168 - 1	WELCH VILLAGE SKI AREA INC	273	25	113	16	27	CCA	39		1		1,500	40.0		0.1	0.0	0.0	0.0	1
680434 - 1	AHLERS, DAVID H	290	25	113	16	31	CC	39		3 CANNON	100	500	13.0	5.1	6.3	3.9	9.0		1
651168 - 2	WELCH VILLAGE SKI AREA INC	273	25	113	16	34	BAB	39	121095	1 QWTA		1,500	40.0	31.7	17.4	27.4	24.1	15.6	1
775230 - 1	HANSON, RONALD	290	25	114	16	23	BB	38		2 POOL THREE US LOCK & DAM8		400	1.3						1
835009 - 1	AGGREGATE INDUSTRIES-NCR INC	244	25	114	16	23	CDD	38	182175	1 QWTAQWTA		700	220.0	18.9	86.4				3
835009 - 2	AGGREGATE INDUSTRIES-NCR INC	244	25	114	16	26	BAC	38		6		700	220.0			196.8	182.5	172.1	1
815161 - 1	HANSON, SHIRLEY A LIVING TRUST	290	25	114	16	35	AAAC	38	175925	1 QWTA	60	700	14.0	1.3	6.0	0.5	6.3	3.6	1
895057 - 1	CHILDS, DENNIS WILL	290	25	114	16	36	ADD	38		2 NELSON LAKE	50	500	8.8						1

DNR Water Appropriation Permits — Active Permits - By County & Location

6/23/2005

Dakota County

Permit #	Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
806052	3	INVER GROVE HEIGHTS, CITY OF	211	19	27	22	3	CCBC	20	207284	1 CJDN		6,600	1,250.0	317.8	226.9	326.5	379.8	189.1	1
043198	1	PRESBYTERIAN HOMES OF	283	19	27	22	4	AAD	20	655908	1 OPDCCJDN	3	125	3.0					7.2	1
043087	1	KLADEK, LARRY	290	19	27	22	5	CA	38	686648	1 OPDC	31	100	8.6						1
043087	2	KLADEK, LARRY	290	19	27	22	5	CA	38		5	31	100	8.6						1
926022	1	INVER GROVE HEIGHTS, CITY OF	281	19	27	22	8	AAC	33	463545	1	75	600	53.0	47.0	45.2	23.6	22.0	25.7	1
806052	4	INVER GROVE HEIGHTS, CITY OF	211	19	27	22	9	AAAA	20	207285	1 CJDN		6,600	1,250.0	108.3	105.6	74.8	184.7	265.4	1
806052	7	INVER GROVE HEIGHTS, CITY OF	211	19	27	22	9	BCCD	20	463527	1 CJDN		6,600	1,250.0	441.0	520.0	390.9	350.7	241.3	1
806052	5	INVER GROVE HEIGHTS, CITY OF	211	19	27	22	9	DAAA	20	165640	1 CJDN		6,600	1,250.0	103.0	153.8	188.0	142.9	338.1	1
806052	6	INVER GROVE HEIGHTS, CITY OF	211	19	27	22	9	DAAD	20	433259	1 CMTSPMHN		6,600	1,250.0	2.9	21.4	1.6	57.7	17.8	1
806052	1	INVER GROVE HEIGHTS, CITY OF	211	19	27	22	10	BDAD	20	225846	1 OPDCCJDN		6,600	1,250.0	1,020	1072.9	1005.4	1137.8	1077.8	3
806052	2	INVER GROVE HEIGHTS, CITY OF	211	19	27	22	10	CDAD	20	208370	1 CJDN		6,600	1,250.0						3
856032	1	SKYLINE VILLAGE MHP	212	19	27	22	11	CBAA	20	208372	1 CJDN		300	25.0	22.9	22.1	25.6	21.2	13.1	1
053007	1	ARBOR POINTE GOLF CLUB	281	19	27	22	15	CCD	20	598696	1 OPCJ	20	150	14.1					7.1	1
926145	1	IND SCHOOL DISTRICT 199	213	19	27	22	22	CDA	20		1		175	1.9	1.8	1.1	0.7	0.9	0.8	1
620564	1	NSP CO DBA XCEL ENERGY	215	19	27	22	30	BCAD	33	208388	1 CFRNCMTS		720	10.0	0.1	0.1	0.0	0.1	0.0	1
745248	1	NSP CO DBA XCEL ENERGY	215	19	27	22	30	BDAC	38	110451	1 QWTAQWTA		2,250	2.0	0.3	0.1	0.0	0.0	0.0	1
026064	1	BITUMINOUS ROADWAYS INC	244	19	27	22	32	ACA	38		5		800	48.0			4.6		1.3	1
786133	1	PRAXAIR INC	213	19	27	22	34	CAA	38	127289	1 CIGL		130	5.0	0.9	1.0	1.0	1.4	1.5	1
856347	1	ATLAS OF MINNESOTA	213	19	27	23	2	BDCA	33	205585	1 CJDN		50	1.5	0.6		0.9	0.3	0.1	1
856347	2	ATLAS OF MINNESOTA	213	19	27	23	2	BDDC	33	205583	1 CJDN		50	1.5		0.7				1
670763	2	COCA-COLA BOTTLING MW	241	19	27	23	3	ACA	33	151595	1 CJDN		1,700	300.0	158.2	178.5	231.3	269.6	248.1	1
670763	1	COCA-COLA BOTTLING MW	241	19	27	23	3	DBBA	33	205588	1 CJDN		1,700	300.0	77.4	81.0	46.9	6.9	9.7	1
026074	1	LOST SPUR GOLF COURSE INC	281	19	27	23	4	ACAB	33	205589	1 OSTPCJDN	20	500	11.0	4.4	4.1	11.0	41.4	6.4	1
786010	TIMB	EAGAN, CITY OF	211	19	27	23	9	ABD	33	205809	1 CJDN		20,450	3,000.0						2
786010	16	EAGAN, CITY OF	211	19	27	23	9	ACB	33	489215	1 CJDN		20,450	3,000.0	297.5	310.6	408.0	217.5	210.8	1
786010	6	EAGAN, CITY OF	211	19	27	23	9	CDCA	33	151552	1 OPDCCJDN		20,450	3,000.0	255.8	143.9	239.2	269.3	261.8	1
043204	1	EAGAN, CITY OF	283	19	27	23	9	DBA	33	678243	1 CJDN	25	300	17.0					5.7	1
786010	7	EAGAN, CITY OF	211	19	27	23	9	DBB	33	151564	1 CJDN		20,450	3,000.0	61.9	177.1	191.7	209.4	142.9	1
866064	2	GOPHER RESOURCE CORP	247	19	27	23	12	CDD	33	658747	1		250	50.0			37.1	46.9	47.2	1
866064	1	GOPHER RESOURCE CORP	247	19	27	23	12	CDDD	33	249060	1 QUUU		250	50.0	34.2	22.9				3
866031	N	RAHN FAMILY PARTNERSHIP	281	19	27	23	14	BDD	33	251575	1	30	700	30.0	10.3	8.1	5.6	5.7	2.7	1
866031	S	RAHN FAMILY PARTNERSHIP	281	19	27	23	14	BDD	33	251576	1	30	700	30.0	7.1	5.5	4.9	5.8	2.8	1
786010	8	EAGAN, CITY OF	211	19	27	23	16	ABCD	33	434046	1 CMTS		20,450	3,000.0	71.2	329.4		93.2	140.3	1
786010	9	EAGAN, CITY OF	211	19	27	23	16	ABCD	33	434030	1 CJDN		20,450	3,000.0	242.9	506.8	278.1	116.8	49.3	1
786010	1	EAGAN, CITY OF	211	19	27	23	16	BAAB	33	205596	1 CJDN		20,450	3,000.0	429.1	153.7	525.1	276.1	151.3	1
786010	3	EAGAN, CITY OF	211	19	27	23	16	BABA	33	207258	1 CJDN		20,450	3,000.0	12.7	58.5	44.0	117.9	39.3	1
786010	4	EAGAN, CITY OF	211	19	27	23	16	BAC	33	235373	1 CJDN		20,450	3,000.0	216.2	280.8	73.6	134.2	129.4	1
786010	2	EAGAN, CITY OF	211	19	27	23	16	BACD	33	205595	1 CJDN		20,450	3,000.0	72.4	37.8	31.5	35.9	48.2	1
786010	11	EAGAN, CITY OF	211	19	27	23	16	BCDD	33	433275	1 CMTS		20,450	3,000.0	458.1		128.8	27.8		1
846155	1	BLUE CROSS BLUE SHIELD OF MN	283	19	27	23	17	ABB	33	151566	1 OPDCCJDN	16	165	10.4	1.9	1.9	2.0	2.2	2.1	1
906262	1	METROPOLITAN COUNCIL	266	19	27	23	18	AD	33		1 QBAA		3,700	329.0	3.4	22.7	3.6	10.6	15.5	1
916073	1	METROPOLITAN COUNCIL	266	19	27	23	18	AD	33		1 QWTA		833	438.0	651.2	587.4	514.8	569.2	575.5	1
916073	3	METROPOLITAN COUNCIL	266	19	27	23	18	AD	33	452732	1 QWTA		833	438.0						1
916073	4	METROPOLITAN COUNCIL	266	19	27	23	18	AD	33	452733	1 QWTA		833	438.0						1
916073	6	METROPOLITAN COUNCIL	266	19	27	23	18	AD	33	452728	1 QWTA		833	438.0						1
916073	7	METROPOLITAN COUNCIL	266	19	27	23	18	AD	33	452726	1 QWTA		833	438.0						1
786010	CG1	EAGAN, CITY OF	211	19	27	23	19	DCD	33	215835	1 CJDN		20,450	3,000.0						3
786010	CG2	EAGAN, CITY OF	211	19	27	23	19	DCDA	33	205597	1 CJDN		20,450	3,000.0						3
896422	1	IND SCHOOL DISTRICT 196	289	19	27	23	23	CDDD	33	205598	1 CJDN	110	180	47.2	14.7	14.7	14.7	14.7	14.7	1
786010	15	EAGAN, CITY OF	211	19	27	23	27	BCC	33	420971	1 CJDN		20,450	3,000.0	102.2	168.0	84.5	19.4	7.9	1

Dakota County

Permit #	Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
786010	5	EAGAN, CITY OF	211	19	27	23	27	CCCC	33	112234	1 CJDN		20,450	3,000.0	309.1	459.0	492.0	495.6	381.9	1
786010	10	EAGAN, CITY OF	211	19	27	23	27	CDCC	33	439839	1 CJDN		20,450	3,000.0	217.7	82.9	143.6	204.6	446.9	1
786010	12	EAGAN, CITY OF	211	19	27	23	28	ADCC	33	433287	1 CJDN		20,450	3,000.0	130.9	13.3	128.3	50.4	196.7	1
786010	14	EAGAN, CITY OF	211	19	27	23	28	DAAD	33	505636	1 CJDN		20,450	3,000.0	232.1	85.0	23.9	26.2	102.2	1
786010	13	EAGAN, CITY OF	211	19	27	23	28	DDCC	33	449230	1 CJDN		20,450	3,000.0	178.4	292.0	238.7	238.5	250.0	1
866084	1	PARKVIEW GOLF ASSOCIATES LLC	281	19	27	23	34	BAA	33	251988	1 OSTP	40	490	30.0	8.8	16.6	10.0	30.1	7.8	1
866084	2	PARKVIEW GOLF ASSOCIATES LLC	281	19	27	23	34	BAC	33	251989	1 OPVLOSTP	40	490	30.0	15.8	13.3	8.1	30.0	14.3	1
610270	1	NSP CO DBA XCEL ENERGY	222	19	27	24	23	DA	33		3 MINNESOTA RIVER		268,175	149,304.9	62,297.7	43,717.6	63,439.1	83,422.6	107,842.9	1
610271	1	NSP CO DBA XCEL ENERGY	222	19	27	24	23	DAAC	33	207690	1 OPDCCJDN		250	50.0	32.1	37.4	46.8	43.6	40.9	1
866002	1	NSP CO DBA XCEL ENERGY	279	19	27	24	24	BCB	33		3 MINNESOTA		800	0.3						1
745014	3	BURNSVILLE, CITY OF	211	19	27	24	26	CCDD	33	206170	1 CJDN		17,860	3,200.0	39.7	166.1	87.1	42.8	32.8	1
796114	2	PEPSI COLA BOTTLING CO	241	19	27	24	26	DCB	33	236162	1 CJDN		1,000	60.0	49.4	63.2	19.6	69.4	60.6	1
796114	1	PEPSI COLA BOTTLING CO	241	19	27	24	26	DCCD	33	207688	1 CJDN		1,000	60.0	62.7	58.2	92.9	48.3	56.5	2
590286	1	EDWARD KRAEMER & SONS INC	244	19	27	24	33	ADB	33		5		1,600	50.0	82.1	138.4	134.0	150.7	150.7	1
590286	2	EDWARD KRAEMER & SONS INC	244	19	27	24	33	ADB	33	420967	1 CJDN		1,600	50.0	24.4			0.1	0.0	1
886329	1	EDWARD KRAEMER & SONS INC	263	19	27	24	33	BAA	33		6		6,000	4,000.0	3,559.3	4,232.7	3,998.6	3,761.6	3,741.5	1
876213	1	AVR INC	248	19	27	24	33	DBA	33		1 OPDC		120	5.0	4.8	4.7	5.0	4.8	4.4	1
745014	6	BURNSVILLE, CITY OF	211	19	27	24	34	ABDB	33	206171	1 CJDN		17,860	3,200.0	83.7	54.0	107.6	101.1	80.7	1
745014	2	BURNSVILLE, CITY OF	211	19	27	24	34	CAAA	33	206176	1 CJDN		17,860	3,200.0	232.7	335.4	305.8	316.1	205.7	1
745014	1	BURNSVILLE, CITY OF	211	19	27	24	34	CAAC	33	206177	1 CJDN		17,860	3,200.0	229.2	245.1	193.9	203.0	195.4	1
745014	8	BURNSVILLE, CITY OF	211	19	27	24	34	CADC	33	206172	1 OPDCCJDN		17,860	3,200.0	76.6	73.8	37.3	65.0	55.8	1
630647	1	HOLNAM INC	247	19	27	24	34	CBB	33	229108	1 CJDN		150	3.1	0.2	0.0	0.0	0.0	0.0	1
745014	4	BURNSVILLE, CITY OF	211	19	27	24	34	CBDD	33	206178	1 CJDN		17,860	3,200.0	113.3	78.3	23.0	197.0	216.4	1
745014	5	BURNSVILLE, CITY OF	211	19	27	24	34	CCBD	33	206179	1 CJDN		17,860	3,200.0	156.8	107.5	40.9	127.7	119.0	1
745014	12	BURNSVILLE, CITY OF	211	19	27	24	34	CCDD	33	439856	1 CJDN		17,860	3,200.0	275.1	241.5	276.7	174.0	294.4	1
745014	7	BURNSVILLE, CITY OF	211	19	27	24	34	CDBB	33	206174	1 CJDN		17,860	3,200.0	237.4	182.6	119.1	195.8	224.3	1
745014	11	BURNSVILLE, CITY OF	211	19	27	24	34	DACB	33	150359	1 CMTS		17,860	3,200.0	159.4	233.7	244.6	237.9	191.0	1
745014	10	BURNSVILLE, CITY OF	211	19	27	24	35	BBBB	33	127259	1 CJDN		17,860	3,200.0	245.6	205.9	88.2	194.8	108.8	1
745014	9	BURNSVILLE, CITY OF	211	19	27	24	35	BBBB	33	127261	1 CSLFCMTS		17,860	3,200.0	186.2	209.2	194.4	268.2	156.8	1
745014	14	BURNSVILLE, CITY OF	211	19	27	24	35	CDD	33	505676	1 CMTS		17,860	3,200.0	117.9	151.8	38.4	129.0	94.3	1
745014	15	BURNSVILLE, CITY OF	211	19	27	24	35	DCC	33	505677	1 CJDN		17,860	3,200.0	303.4	221.2	224.4	280.7	270.2	1
745014	16	BURNSVILLE, CITY OF	211	19	27	24	36	DCCA	33	420992	1 CJDN		17,860	3,200.0	35.5	72.0	228.8	223.4	194.8	1
745168	2	SOUTH ST PAUL, CITY OF	211	19	28	22	16	CABA	20	201153	1 CJDNCSTL		11,050	1,200.0	2492.5	2578.1	2210.2	2756.5	2440.4	
966120	1	WEST ST PAUL, CITY OF	281	19	28	22	20	ACBC	20	542938	1 OPDC	20	250	14.1	6.6	6.0	3.4	5.3	5.1	1
745168	6	SOUTH ST PAUL, CITY OF	211	19	28	22	21	BACD	20	200664	1 CJDNCSTL		11,050	1,200.0	96.1	71.1	50.7	97.8	54.2	1
745168	3	SOUTH ST PAUL, CITY OF	211	19	28	22	22	CBAC	20	200675	1 CJDN		11,050	1,200.0	34.8	44.1	73.4	180.2	118.5	1
745168	1	SOUTH ST PAUL, CITY OF	211	19	28	22	27	CBBC	20	200674	1 CJDN		11,050	1,200.0	314.8	300.1	313.4	363.4	299.9	1
745168	7	SOUTH ST PAUL, CITY OF	211	19	28	22	27	DAAC	20	200676	1 CJDNCSTL		11,050	1,200.0						1
976087	RW-1	MN POLLUTION CONTROL AGENCY	271	19	28	22	28	AAA	20	477691	1 OSTP		2	1.0	0.2				0.8	1E
745168	8	SOUTH ST PAUL, CITY OF	211	19	28	22	28	BACC	20	127251	1 CJDN		11,050	1,200.0	3.7	1.8				1
866052	POND	SOUTHVIEW COUNTRY CLUB	281	19	28	22	29	ACC	20		5	100	800	53.0	27.3	26.1	26.1		22.9	1
866052	1	SOUTHVIEW COUNTRY CLUB	281	19	28	22	29	ACCA	20	236153	1 OPDCCJDN	100	800	53.0	15.2	15.5	10.1	20.0	15.4	1
866052	2	SOUTHVIEW COUNTRY CLUB	281	19	28	22	29	ACCA	20	200679	1 OPCJ	100	800	53.0	9.3	11.4	6.0	11.9	9.0	1
886013	1	SOUTHRIDGE MANUFACTURED HOME COM	212	19	28	22	33	AAA	20		1		45	9.0	3.8	3.8	3.9	3.9	3.9	1
745168	4	SOUTH ST PAUL, CITY OF	211	19	28	22	34	ABAC	20	208347	1 OPDCCSTL		11,050	1,200.0	759.6	754.2	626.3	531.4	761.7	1
756327	1	D & D LAND LLC	248	19	28	22	34	ADA	20	207096	1 OPDC		160	0.0	0.0	0.0	0.0	0.0	0.0	1
766344	1	NSP CO DBA XCEL ENERGY	215	19	28	23	23	A	20		1		200	0.2	0.0	0.0	0.0	0.0	0.0	1
610538	1	ECOLAB INC	249	19	28	23	23	AAA	20	200828	1 CJDN		500	25.0	9.7	8.6	8.3	3.5	5.7	1
926229	1	SOMERSET COUNTRY CLUB	281	19	28	23	24	AAA	20	200848	1 OPDCCJDN	40	600	36.0	21.7	15.9	9.0	16.1	14.3	1
866114	3	MENDAKOTA COUNTRY CLUB	281	19	28	23	26	DADA	20	238667	1 CJDN	70	1,350	38.1						2

Dakota County

Permit # Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Permitted Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
866114 - 1	MENDAKOTA COUNTRY CLUB	281	19	28	23	26	DBC	20	256266	1	70	1,350	38.1	4.9	4.8	2.9	4.7	5.6	1
866114 - 2	MENDAKOTA COUNTRY CLUB	281	19	28	23	26	DBDB	20	509077	1 OPDCCJDN	70	1,350	38.1	18.9	20.3	11.7	27.9	21.1	1
756226 - 2	CATHOLIC CEMETERIES	282	19	28	23	27	DB	33		1 OPDCCJDN	100		16.3	6.3	4.3	5.1	12.7	5.6	2
756226 - 1	CATHOLIC CEMETERIES	282	19	28	23	27	DC	33		1 OPCJ	100		16.3						1
631038 - 1	ST THOMAS ACADEMY	283	19	28	23	35	CAAD	20	200871	1 CJDN	28	300	9.0	7.8	3.2	3.1	2.8	2.1	1
651122 - 1	VISITATION MONASTERY	212	19	28	23	35	DBA	20		1		200	4.5	2.5	3.0	3.1	3.1	2.8	1
756295 - 2	CONZEMIUS, GEORGE	290	19	112	18	1	AACC	39	232244	1 QWTA	200	400	50.0	13.5	21.5	5.4	24.1	20.9	1
756295 - 1	CONZEMIUS, GEORGE	290	19	112	18	1	ABDB	39		1 QWTA	200	400	50.0	13.5	21.5	5.4	24.1	20.9	1
776035 - 1	GERGEN, EDWARD JR	290	19	112	18	1	CCBD	39	120151	1 OPDCCJDN	45	600	14.7	3.5	3.1	1.9	7.5	5.4	1
671265 - 1	MULVIHILL, GLENN M	290	19	112	18	3	ABDD	39	207894	1 OPDCCJDN	150	1,000	43.0	21.5	33.6	15.4	29.2	31.1	1
006093 - 1	FELTON, DOUGLAS AND NORA	290	19	112	18	3	BACC	39	623887	1 OPDC	70	500	22.8	8.1	16.8	6.4	17.1	10.6	1
996023 - 1	FELTON, DOUGLAS A	290	19	112	18	3	BCAA	39	585103	1 OPDC	70	1,000	22.8	13.5	27.0	7.2	22.4	13.6	1
661204 - 2	FELTON, DOUGLAS AND NORA	290	19	112	18	3	CACC	39	255119	1 QWTA	105	900	34.2	14.0	21.7	12.7	23.7	20.2	1
661204 - 1	FELTON, DOUGLAS AND NORA	290	19	112	18	3	CDCB	39	121846	1 QWTA	105	900	34.2						2
671257 - 1	FELTON, ARNOLD	290	19	112	18	4	ACAA	39	207651	1 OPDCCJDN	130	1,000	42.4	14.6	34.0	16.2	39.8	19.4	1
776519 - 1	CONZEMIUS, JOHN	290	19	112	18	4	BDDA	39	162758	1 QBAA	140	1,000	40.6	15.1	15.1	15.1	26.4	22.6	1
916172 - 1	FELTON, DOUGLAS A	290	19	112	18	4	CCBD	39		1	260	1,100	91.8	42.8	72.8	34.3	88.0	51.9	1
680381 - 1	GERGEN, FLORENCE M	290	19	112	18	4	DACC	39	207895	1 CJDN	120	1,000	20.0						1
916206 - 1	FELTON, DOUGLAS A	290	19	112	18	5	AACC	39	487005	1 OPDC	130	800	35.0	10.4	21.1	10.8	28.0	18.3	1
776498 - 1	LEGARE, ORIN J	290	19	112	18	5	B	39		1	145	1,000	48.3						1
776096 - 1	ENDRES FARMS	290	19	112	18	6	ADB	39	243772	1 OPDC	160	1,000	46.5	15.8	21.4	13.8	44.3	21.8	1
766082 - 1	ENGLER, ARLENE	290	19	112	18	6	BDAA	39		1 OPCJ	110	500	36.6	17.2	25.7	20.8	26.2	21.4	1
776331 - 1	OTTE, WILLIAM M	290	19	112	18	6	CCBD	39		1 OPCJ	175	850	57.0	20.3	21.1	22.6	26.4	23.7	1
796103 - 1	RANDOLPH, CITY OF	211	19	112	18	7	AAC	39	161402	1 CJDN		500	17.4	13.9	13.8	11.2	15.3	15.8	1
966119 - 1	MARTHALER, DON	290	19	112	18	7	BDB	39	542263	1 OPDC	58	700	13.0	9.0	8.8	9.1	10.9	12.6	1
756308 - 1	MCCOY, RANDALL	290	19	112	18	10	ABD	39	124187	1 QWTA	40	300	11.6	2.8	2.2		4.3	6.7	1
710047 - 1	MCCOY, RANDALL	290	19	112	18	10	ADB	39	251403	1 QWTA	80	600	23.3	2.5	2.6		12.1	6.3	1
776372 - 1	FELTON, DOUGLAS AND NORA	290	19	112	18	10	BBBC	39	256721	1 OPCJ	226	1,000	73.6	25.2	44.0	22.1	66.6	30.5	1
660931 - 1	MULVIHILL, GLENN M	290	19	112	18	11	ADCA	39		1 OPCJ	92	750	31.0	13.8	23.0	6.6	12.6	18.9	1
776037 - 1	FELTON, DOUGLAS A	290	19	112	18	11	BCAD	39	255922	1 OPCJ	75	600	26.5	8.7	20.3	7.8	23.4	11.8	1
766149 - 1	LUNDELL, EARL	290	19	112	18	12	BCBD	39		1 QWTA	42	300	12.5	5.4	10.0	2.1	11.4	10.0	1
826113 - 1	FELTON, DOUGLAS A	290	19	112	18	12	CBC	39	179106	1	120	800	35.0	11.9	18.8	7.8	17.5	10.7	1
026009 - 1	CANNON GOLF CLUB INC	281	19	112	18	12	DCC	39	651942	1 OPDC	80	400	60.0		21.4	14.8	28.1	20.8	1
776042 - 1	OTTE, THOMAS L	290	19	112	19	2	DACC	39	249105	1 OPCJ	100	1,000	27.1	17.9	17.8	16.0	23.7	20.4	1
776127 - 1	PETERSON, BRUCE	290	19	112	19	5	BC	39		1 OPCJ	140	1,000	41.0	2.2	4.8	2.2	5.6		1
756289 - 1	VOLKERT, VERNON	290	19	112	19	6	CBAC	39	207697	1 OPDCCJDN	130	600	46.0	4.8	23.0	6.9			1
756290 - 1	WAGNER, NORBERT	290	19	112	19	6	DAC	39	216436	1 OPDC	120	500	35.0	3.8	9.4	0.4	12.3	1.9	1
896309 - 1	BRAUN, CRAIG	290	19	112	19	8	CBB	39	441884	1 OPDC	80	600	22.0				2.8	5.3	1
766365 - 1	VOLKERT, FERDINAND	290	19	112	19	9	A	39		1 OPCJ	80	1,200	27.0	41.4	20.7	20.7	20.7	23.3	1
776012 - 1	VOLKERT, FERDINAND	290	19	112	19	9	DBCC	39		1 OPCJ	158	1,000	51.5	19.2	19.2	19.2	19.2	19.4	1
766217 - 1	VOLKERT, FERDINAND	290	19	112	19	9	DDAB	39		1 OPCJ	156	800	52.0	15.5	21.1	17.6	28.2	21.1	1
776029 - 1	OTTE, WILLIAM M	290	19	112	19	10	A	39		1	120	800	33.3	11.4	11.6	16.2	16.2		1
776358 - 1	VOLKERT, LEE H	290	19	112	19	10	C	39		1	156	1,200	52.0	26.0	26.0	21.0	33.0	21.0	1
766177 - 1	VOLKERT, WILLMER T	290	19	112	19	11	BACC	39		1 OPCJ	187	750	47.0	28.9	38.9	28.6	25.4	22.3	1
766387 - 1	VOLKERT, FERDINAND	290	19	112	19	11	C	39		1 OPCJ	160	1,000	52.0	24.0	25.9	21.6	21.6	25.9	1
776056 - 1	OHMANN, MARTIN A	290	19	112	19	11	DBAC	39		1 OPCJ	120	700	40.0	8.9	26.8	28.0	17.8	20.3	1
776028 - 1	OTTE, WILLIAM M	290	19	112	19	12	BA	39		1 OPCJ	100	800	32.6	16.5	10.8	15.6	16.2	11.8	1
776011 - 1	VOLKERT, LEE H	290	19	112	19	12	CCC	39		1 OPCJ	210	1,000	69.0	24.0	20.0	17.6	20.2	18.0	1
776305 - 1	BARRETT, MICHAEL J	290	19	112	19	13	ADBC	39		1 OPCJ	145	800	48.3	1.9	10.6	2.6	9.6	3.3	1
796258 - 1	OTTE ENTERPRISES INC	290	19	112	19	13	DDAA	39	249753	1 OPCJ	185	850	53.0	21.9	29.1	32.5	40.4	34.7	1

DNR Water Appropriation Permits
Dakota County

Active Permits - By County & Location

6/23/2005

Permit #	Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Permitted Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
786296	1	BAKKEN, ROBIN & RONALD	290	19	112	19	14	BBD	39	232240	1 OPDCCJDN	75	800	25.0						1
796232	1	ERRINGTON, DAVID	290	19	112	19	15	CDCA	39	232241	1 OPDCCJDN	120	900	40.0	5.1	17.2	5.1	18.1	15.5	1
796233	1	ERRINGTON FARMS	290	19	112	19	15	CDDA	39	232242	1 OPDCCJDN	80	900	27.0	19.5	26.0	4.3	26.0	26.0	1
776444	1	ERRINGTON, DAVID	290	19	112	19	15	DB	39	247969	1 OPCJ	160	900	53.0	4.6	11.5	1.7	16.1	13.8	1
006013	1	BARSNESS CONSTRUCTION & EXCAVATIO	244	19	112	19	21	C	39		5		300	25.0						1
776569	1	HAND, ROGER	290	19	112	19	22	DCAA	39	101171	1 CJDN	200	800	66.6	14.6	14.6	14.6	14.6	14.6	1
896389	1	LORENCES BERRY FARM	290	19	112	20	3	DAA	39		3	70	700	20.0	11.1	7.2	2.7	10.8	13.5	1
776277	1	BAUER, ALVIN	290	19	113	17	1	ABCC	38	120168	1 OPCJ	150	800	50.0	0.2	3.5	10.8	0.6	11.5	1
776251	1	KIMMES, ROGER	290	19	113	17	1	BABB	38		1 OPCJ	140	800	39.3	11.4	15.2	15.2	30.4	22.8	1
766192	1	BAUER, STEVEN	290	19	113	17	2	ABAB	38	170869	1 OPCJ	155	800	49.0	21.0	25.2	12.6	33.6	25.2	1
776192	1	KIEFFER, WAYNE	290	19	113	17	2	DBAA	38	120156	1 OPCJ	170	800	57.0	7.4	12.3	2.9	18.1	14.1	1
776209	1	WEBER, GERALD E	290	19	113	17	3	CCAA	38	170858	1 OPCJ	260	800	85.0	8.4	10.4	8.1	18.0	12.8	1
986100	1	MAINZ, DENNIS	290	19	113	17	3	DDB	38	594054	1 OPDC	140	800	31.0	2.0	8.4	3.2	8.5	6.3	1
776207	1	KIMMES, GERALD, SHEILA, LOUISE	290	19	113	17	4	BBDD	38	255926	1 OPCJ	140	800	39.8	5.1	16.5	39.6	39.8	40.0	1
776179	1	GERGEN, LEON J	290	19	113	17	4	CACC	38		1 OPCJ	240	900	70.0	28.0	35.7	24.5	27.0	43.2	1
776178	1	JOHNSON, TERRY	290	19	113	17	5	AA	38		1 OPCJ	165	800	55.0	9.0	12.0	9.0	11.9	10.0	1
776285	1	MOLITOR BROTHERS LP	290	19	113	17	10	AACD	38		1 OPCJ	210	800	73.3	28.5	25.6	11.4	31.9	26.5	1
776067	1	MOLITOR BROTHERS LP	290	19	113	17	10	ADCB	38		1 OPCJ	365	1,000	84.7	62.5	69.3	19.5	69.2	67.0	1
766392	1	RAWAY, FLORENCE M	290	19	113	17	11	BBC	38	194228	1 OPDCCJDN	211	500	60.0	10.5	12.5	6.3	33.9	14.2	1
776279	1	SCHAFFER, WILBERT	290	19	113	17	11	CACD	39		1 OPCJ	230	800	76.6	10.8	16.1	3.6	31.7	16.9	1
776267	1	EL MEGCA FARM	290	19	113	17	13	CADD	39	255300	1 OPCJ	280	1,800	80.0	45.0		26.5	26.5	28.3	1
776267	2	EL MEGCA FARM	290	19	113	17	13	CBAA	39	540333	1 OPCJ	280	1,800	80.0	35.0	40.0	23.0	24.0	34.0	1
776278	1	SCHAFFER, WILBERT	290	19	113	17	14	BBDD	39		1 OPCJ	320	1,000	106.6	19.5	30.9	14.6	48.1	29.5	1
776373	1	BAUER, LOIS	290	19	113	17	14	DBDD	39	255865	1 OPCJ	150	1,000	48.4	4.5	8.2	6.6	15.5	20.5	1
776202	1	LEIFELD, ROBERT	290	19	113	17	15	BBDA	39		1 OPCJ	280	1,000	93.3	36.8	56.2	19.5	41.2	35.1	1
766402	1	PEINE, TODD C	290	19	113	17	15	DCBC	39		1 OPCJ	240	800	62.2	16.8	11.0	13.4	14.4	21.6	1
906159	1	PEINE, DANIEL AND BEVERLY	290	19	113	17	18	ADBA	39	506717	1 OPDC	120	800	34.1	9.6	6.0	8.1	9.6	7.2	1
776440	1	MOLITOR, BRIAN	290	19	113	17	18	CDBB	39	253010	1 OPCJ	140	800	45.6	19.6	29.3	7.2	34.3	29.2	1
776062	1	STEIN, NORBERT	290	19	113	17	18	DDBB	39	120144	1 OSTPCJDN	125	900	34.0	0.9	0.0	7.9	27.8	16.3	1
766197	1	MOLITOR, EUGENE	290	19	113	17	19	AACC	39	120145	1 OPDCCJDN	150	900	49.0	25.5	29.3	7.2	33.9	29.9	1
756348	1	STEIN, NORBERT	290	19	113	17	19	CADD	39	121824	1 OPCJ	240	1,000	80.0	3.5	3.8	20.4	45.9	22.8	1
776389	1	LEIFELD, ROBERT & CAROLIN	290	19	113	17	20	BCAA	39	132216	1 OPDCCSTL	160	900	53.0	9.5	10.8	5.8	12.1	28.8	1
776191	1	CONZEMIUS, JOHN	290	19	113	17	21	ACCD	39	170867	1 OPCJ	320	1,100	92.7	34.5	34.5	34.5	49.4	49.4	1
906181	1	FOX, ROBERT	290	19	113	17	23	ADAA	39	506606	1 OPCJ	190	700	46.5	7.0	9.9	2.9	23.6	12.4	1
896312	1	LUDWIG, MS EILEEN	290	19	113	17	23	BACB	39	457130	1 OPDC	130	850	31.7	20.0	24.6	12.1	31.1	32.5	1
776375	1	WEBER, JAMES	290	19	113	17	28	AACC	39	170865	1 OPCJ	160	800	53.3	20.1	20.1	10.9	10.9	16.3	1
776190	1	CONZEMIUS, JOHN	290	19	113	17	28	CBDC	39	120163	1 OPCJ	190	800	55.7	20.5	20.5	20.5	41.1	30.8	1
776390	1	BURR, MARY LEE	290	19	113	17	29	CAAD	39		1 OPCJ	120	900	40.0		10.6		11.3		1
756118	1	CALLISTER, COLIN	290	19	113	17	31	BDAA	39	121808	1 OPCJ	240	1,000	65.0	4.2	4.3				1
926114	1	GUSTAFSON PINE CREEK FARMS	290	19	113	17	31	CACC	39	216375	1 OPDCCJDN	135	800	39.0	29.2	23.8	7.0	31.2	28.5	1
926115	1	GUSTAFSON PINE CREEK FARMS	290	19	113	17	31	DCAB	39	232243	1 OPCJ	135	800	39.0	25.6	20.1	7.0	31.9	29.5	1
776261	1	CONZEMIUS, MICHAEL & JOYCE	290	19	113	17	33	BCBC	39	120158	1 OPCJ	440	1,300	129.0	47.5	47.7	47.7	47.7	59.6	1
786119	1	AHLERS, DAVID H	290	19	113	17	33	DACC	39		1 OPCJ	210	700	68.3	12.0	15.7	15.1	26.4	28.3	1
786138	1	CONZEMIUS, JOHN	290	19	113	17	34	DAAB	39	185941	1 CJDN	120	800	34.7	16.2	12.9	12.9	22.6	25.9	1
766304	1	BEISSEL, MARJORIE	290	19	113	18	2	BCDD	38	194224	1 OPCJ	105	900	30.0	26.0	40.0	9.3	12.7	9.4	1
786338	1	ENDRES, MELVIN	290	19	113	18	4	AACC	38	141820	1 OPDCCJDN	280	900	81.7	25.9	39.2	18.3	66.8	34.5	1
896246	1	ENDRES, LEON	290	19	113	18	4	BABB	38	443886	1 OPDC	220	900	53.8	21.4	41.9	20.6	53.4	48.7	1
896306	1	LEIFELD, ROBERT	290	19	113	18	7	BCDD	38	457135	1 OPDC	90	800	19.4	5.7	6.5	4.5	14.8	7.4	1
766153	1	DOHMEN, EUGENE	290	19	113	18	7	BDBB	38		1 OPCJ	235	700	58.7	5.7	10.8	14.8	29.1	33.1	1
866247	3	HAMPTON, CITY OF	211	19	113	18	8	ADA	38	680543	1 CJDN		925	22.0				5.9	9.3	1
															14.7	12.5	18.7	24.4	20.3	

DNR Water Appropriation Permits — Active Permits - By County & Location

6/23/2005

Dakota County

Permit #	Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Permitted Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
866247	2	HAMPTON, CITY OF	211	19	113	18	8	ADDC	38	205799	1 CJDN		925	22.0	14.7	17.5	18.7	18.5	11.0	1
776093	1	PEINE, HAROLD AND PAMELA	290	19	113	18	11	CAAD	39	255665	1 OPCJ	150	800	50.0	0.3	0.5	0.3	0.4	0.4	1
651188	1	NEW TRIER, CITY OF	211	19	113	18	11	DDDC	39	207652	1 CSTLCFRN		275	5.0	0.3	3.0	0.0	0.1	3.2	1
651188	2	NEW TRIER, CITY OF	211	19	113	18	11	DDDC	39	474331	1 CSTLCFRN		275	5.0	2.8	0.5	3.2	3.3	0.0	1
776271	1	BEISSEL, JOE	290	19	113	18	12	BABC	38		1 OPCJ	120	800	40.0	8.7	18.6	5.9	22.4	12.9	1
745076	1	KIMMES, RAINER	290	19	113	18	15	CACC	39		1 OPCJ	115	800	38.0	12.4	10.9	13.5	22.9	17.4	1
816152	1	DOHMEN, EUGENE	290	19	113	18	18	ABDC	38	171736	1 OPDCCJDN	95	500	28.0		5.0	4.2	17.2	6.1	1
776255	1	MULVIHILL, TIMOTHY	290	19	113	18	19	CBCC	39	251473	1 OPCJ	130	900	43.3	21.3	58.6	23.2	38.2	35.6	1
776293	1	KIMMES, RAINER	290	19	113	18	22	AABC	39	120160	1 OPDCCJDN	220	800	71.7	23.9	29.8	21.3	40.7	27.4	1
661079	1	GUSTAFSON, DEIL O	290	19	113	18	24	DDC	39		1 OPCJ	120	850	34.4	24.3	22.7	5.7	28.7	25.2	1
650266	1	CALLISTER, WILLIAM	290	19	113	18	25	CDCC	39		1 OPCJ	132	900	38.5	13.3	15.2	3.3	21.5	14.1	1
756111	1	CALLISTER, WILLIAM	290	19	113	18	25	DCAD	39	121807	1 OPDCCJDN	320	1,000	88.0	17.3	30.9	7.4	35.3	23.2	1
776247	1	FRANDRUP, ARTHUR	290	19	113	18	27	CDBB	39		1 OPCJ	160	800	53.3	7.7	8.7	1.0	10.3	10.2	1
016072	1	ENDRES FARMS	290	19	113	18	29	BBB	39	642402	1 OPDC	145	800	50.0		23.6	4.6	46.5	20.6	1
776097	1	MOORHOUSE, WILLIS	290	19	113	18	31	C	39		1 OPCJ	160	1,000	52.1	11.8	21.6	16.0	26.5	22.8	1
856249	1	FELTON, DOUGLAS A	290	19	113	18	31	D	39	198302	1 OPDCOPDC	120	700	35.0	11.0	19.4	4.8	31.2	14.6	1
776050	1	OTTE, JEROLD A	290	19	113	18	32	DDBD	39		1 OPCJ	160	1,000	43.0	8.6	20.3	8.8	19.7	15.5	1
776126	1	GERGEN, PAUL A	290	19	113	18	33	BAC	39	101144	1 OPCJ	130	850	37.0	6.2	18.8	2.3	15.2	8.1	1
776049	1	OTTE, JEROLD A	290	19	113	18	33	CCBA	39		1 QWTA	80	1,000	43.0	6.1	9.6	2.0	9.0	6.0	1
776199	1	OTTE, LEROY E	290	19	113	18	33	DBCC	39		1 OPCJ	135	900	43.0	6.1	5.5	4.0	22.9	11.0	1
776311	1	MOLITOR BROTHERS LP	290	19	113	18	34	BCAA	39	213978	1 OPCJ	300	750	97.7	37.2	32.5	15.7	45.2	42.2	1
756127	1	GERGEN, ED & WILLIAM	290	19	113	18	34	CCAA	39	124156	1 QWTA	160	800	46.0	8.2	14.1	4.3	28.7	19.0	1
766040	1	FRANDRUP, ARTHUR H	290	19	113	18	34	DA	39		1 OPCJ	120	800	38.9	9.3	17.9	20.7	20.8	10.6	1
776101	1	GERGEN, WILLIAM JR	290	19	113	18	34	DCBD	39	120152	1 OPDCCSTL	100	600	33.3	4.6	4.4	2.9	8.5	5.1	1
026028	1	CARNEL, JAMES	290	19	113	18	35	A	39	255728	1	135	850	23.0		17.0	7.6	12.4	14.7	1
016084	1	MOLITOR BROTHERS FARMS	290	19	113	18	35	C	39		1	140	750	38.0	19.9	21.9	5.5	29.3	28.1	1
926116	1	GUSTAFSON PINE CREEK FARMS	290	19	113	18	36	ACDD	39	216374	1 OPDCCJDN	135	800	39.0	22.6	21.9	7.3	26.2	24.6	1
776376	1	CONZEMIUS, GEORGE	290	19	113	18	36	BDBB	39		1 QWTA	135		45.0	11.0	18.3	3.6	23.4	22.2	1
776376	2	CONZEMIUS, GEORGE	290	19	113	18	36	CACC	39		1 QWTA	135		45.0	11.0	18.3	3.6	23.4	22.2	1
766210	1	BETZOLD, KEN	290	19	113	19	2	BBD	38		1	140	750	40.0	15.8	27.6	14.4	36.9	22.0	1
966191	1	OLSON, DAVID AND MICHELE	290	19	113	19	3	BAAC	38	174662	1 OPDC	70	600	15.3		2.1		13.2	7.7	1
766371	1	DOUBLE B FARMS INC	290	19	113	19	4	CDAA	38		1 OPCJ	130	1,000	42.4	50.0	17.5	26.6	21.1	22.9	1
766372	1	DOUBLE B FARMS INC	290	19	113	19	4	DCAA	38		1 OPCJ	260	1,000	84.7	17.5	50.0	45.3	50.5	25.3	1
766250	1	FOUNTAIN VALLEY GOLF CLUB	281	19	113	19	5	AA	38		1 OPCJ	60	550	20.0	17.9	16.1	11.1	17.8	13.4	1
776290	1	ANGUS, ALYN	290	19	113	19	5	DBDD	38		1 OPCJ	160	600	53.3	18.2	27.7	15.1	28.6	15.9	1
776564	1	DAKOTA ELECTRIC CO	283	19	113	19	6	BB	38		1 QWTA	4	95	1.3	0.9	0.9	0.3	0.8	0.4	1
670067	2	ADELMANN, ROBERT	290	19	113	19	6	BC	38		1 OPDCOPDC	240		39.0						1
796291	1	BRAUN, CRAIG	290	19	113	19	12	BDCA	38	120192	1 CJDN	252	550	56.0				2.8	6.4	1
043236	1	HOFFMAN, ALLEN & MARILYN	290	19	113	19	13	ABD	38	698244	1 OPDC	133	800	38.0					17.7	1
776237	1	WAGENKNECHT, GERALD	290	19	113	19	15	AADC	38		1 OPCJ	240	1,000	80.0	16.5	26.1	24.4	64.0	36.7	1
786064	1	HARRIS, IOLA & TOM, SUSAN STRESE	290	19	113	19	23	BCBD	38	232239	1 OPDCCJDN	185	800	61.6	3.0	9.2	1.7	15.1	9.4	1
766385	1	SORG, RANDY & WILLIAM	290	19	113	19	25	BDBB	39		1 OPCJ	130	1,000	38.0	14.1	24.7		15.0	14.1	1
776103	1	BETZOLD, KEN	290	19	113	19	26	DCB	39		1 OPCJ	170	750	125.8	6.7	10.5	11.5	28.8	22.6	1
786370	1	BETZOLD BROTHERS	290	19	113	19	33	AACD	39	170857	1 OPDC	140	700	46.6	8.7	19.9	12.8	32.4	18.4	1
896348	1	OTTE, THOMAS L	290	19	113	19	36	BDB	39	457133	1 OPDC	270	900	73.3	23.5	23.6	32.0	53.1	46.0	1
610128	1	ADELMANN, WILLIAM R	290	19	113	20	1	ABB	38		3 VERMILLION	90	500	12.0	1.7	9.9				1
043125	1	PFLAUM, CALVIN AND DONALD	290	19	113	20	1	CBD	38	686637	1 OPDC	125	600	38.0					1.8	1
670067	1	ADELMANN, ROBERT	290	19	113	20	1	DAAA	38	207515	1 OPDC	240		39.0	7.7	17.2		7.7	24.7	1
796305	1	METRO TURF INC	284	19	113	20	2	ACBB	38		1 OPCJ	80	550	22.0						1
776452	1	NICOLLET NURSERY	285	19	113	20	2	ADCB	38		1 QWTA	80	300	7.0	3.3	6.0	5.2	4.8	6.0	1

Dakota County

Permit #	Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Permitted Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
846194	2	PFLAUM, CALVIN	290	19	113	20	2	CADB	38		3 VERMILLION	80	350	23.0			0.4		0.7	1
846194	1	PFLAUM, CALVIN	290	19	113	20	2	DBAD	38	175913	1 QWTA	80	350	23.0		6.0				1
886352	1	PFLAUM, CALVIN	290	19	113	20	2	DBCC	38	435224	1 OPDC	170	700	47.0	35.4	28.0	7.2	11.7	11.1	1
926133	1	BACHMANS INC	285	19	113	20	3	CCDC	38	207512	1 OPDCCJDN	15	560	26.5	3.6	3.0	2.3	2.8	1.7	1
926133	2	BACHMANS INC	285	19	113	20	3	CCDC	38	207513	1 OPDCCJDN	15	560	26.5	18.1	20.6	18.3	24.1	21.4	1
906101	1	BACHMANS INC	285	19	113	20	3	CDB	38		5	45	450	30.0	15.2	9.6	13.5	13.1	6.6	1
026060	1	PFLAUM FARMS	290	19	113	20	3	DAC	38	651959	1 OPDC	80	600	23.0		7.2	3.7	10.6	6.8	1
896208	1	CROSS NURSERIES INC	285	19	113	20	5	DCAD	38	443888	1 OPDC	60	600	33.0	7.7	8.9		9.5	4.8	1
033162	1	STORLIE, JOHN	244	19	113	20	7	ADA	38		5		300	7.0				3.9		1
026018	1	BARTON SAND & GRAVEL	244	*19	113	20	7	BAC	38		5		800	35.0		0.1	9.1	8.3	0.5	1
986096	1	CHADWICK VEGETABLE FARM	290	19	113	20	9	BCB	38	594079	1 OPDC	93	700	21.0	6.6	11.7	4.3	12.1	6.1	1
876053	2	BACHMANS INC	285	19	113	20	10	ABDD	38	239930	1	70	1,600	160.0	88.4					3
876053	1	BACHMANS INC	285	19	113	20	10	ACBD	38	239928	1	70	1,600	160.0	2.5	1.2	1.5	3.4	3.0	1
926112	1	BACHMANS INC	285	19	113	20	10	ACCB	38	239930	1	250	700	40.0	17.0	38.2	10.4	56.6	16.3	1
876053	3	BACHMANS INC	285	19	113	20	10	ACDA	38		5	70	1,600	160.0		86.1	75.6	96.3	89.4	1
876053	4	BACHMANS INC	285	19	113	20	10	ACDA	38		5	70	1,600	160.0		17.5	13.0	14.8	31.1	1
053112	1	DEVNEY, MIKE AND EILEEN	290	19	113	20	15	CDC	38	686635	1 OPDC	80	800	24.0				12.6	9.0	1
776198	1	SIEBENALER, LEO	290	19	114	16	7	BACB	38		1 OPCJ	200	800	70.0	10.5	14.3	6.1	47.5	29.3	1
776286	1	SORG, RANDY	290	19	114	16	7	DDBB	38	170860	1 OPDCCFRN	160	1,000	53.3	28.2	28.2	14.1	21.1	14.1	1
786018	1	CARLSON, ALLEN	290	19	114	16	8	DBBA	38		1 OPCJ	45	600	15.0	3.2	7.5				1
776078	1	REUTER FARMS PARTNERSHIP	290	19	114	16	17	ABDD	38	255658	1 OPCJ	160	550	45.0	2.0	8.1	4.7	20.8	25.2	1
043163	1	REUTER, CARL	290	19	114	16	17	DCB	38	256190	1	62	525	20.0					11.8	1
043218	1	SONTAG, BEN	290	19	114	16	20	AA	38	698242	1 QWTA	200	1,000	60.0					47.4	1
776445	1	SONTAG, BEN	290	19	114	16	20	CADA	38	171732	1 CIGLCMTS	200	1,100	67.0	35.9	35.3	49.9	62.6	36.8	1
776088	1	CARLSON, KEITH	290	19	114	16	30	ADBB	38		1 OPCJ	273	1,000	84.4	28.8	28.8	21.6	36.0	28.8	1
776322	1	BIRK, DAVID & JOSEPH	290	19	114	17	1	DCAA	38		1 OPCJ	225	1,000	75.0	7.5	16.8	9.1	27.1	14.8	1
766278	1	CONZEMIUS, JOHN	290	19	114	17	3	CAC	38	408251	1 OPCJ	140	800	40.0	13.6	13.8	17.3	34.6	27.6	1
786190	1	BAUER, LOREN & WILLARD	290	19	114	17	4	CCD	38	242343	1 OPCJ	120	750	40.0	20.7	26.3	26.0	28.8	35.6	1
766084	1	BAUER, LOREN & WILLARD	290	19	114	17	4	DBC	38		1 OPCJ	240	1,000	68.0	26.4	22.4	15.5	17.6	26.0	1
691102	1	BAUER, LOREN & WILLARD	290	19	114	17	5	AACC	38	250177	1 QWTA	320	1,000	106.7	19.4	21.7	23.5	39.2	44.9	1
766184	1	BAUER, WALTER M	290	19	114	17	5	CABA	38	121847	1 CJDNCSTL	160	550	43.0	16.3	27.1	19.8	38.1	24.1	1
866179	1	BAUER, ROBERT	290	19	114	17	6	ACD	38		3 VERMILLION	55	450	15.0	14.7	14.2	11.6	12.1	12.5	1
756126	1	BAUER, ROBERT	290	19	114	17	6	BBDD	38	121821	1 QWTA	206	1,000	68.7	61.9	67.5	18.8	49.1	37.1	1
710910	1	BESKAU, JIM	290	19	114	17	6	DADC	38	207896	1 QWTA	220	1,000	73.3	19.7	40.1	43.0	60.0	42.4	1
731435	1	GIRGEN, LEO	290	19	114	17	7	BADD	38	232247	1 QWTA	140	850	37.0	23.1	34.6	13.3	28.4	10.4	1
886108	1	BAILEY NURSERIES	290	19	114	17	7	CACC	38	207623	1 OPDCCJDN	280	1,000	61.0	43.1	29.8	8.2	45.9	32.8	1
756224	1	BAILEY NURSERIES	285	19	114	17	7	DBDD	38	216376	1 OPDCCJDN	240	1,000	65.0	26.7	34.0	9.3	41.4	29.1	1
756374	1	BAUER, JERRY	290	19	114	17	8	ABC	38	236554	1 CJDN	220	1,000	67.0	26.7	44.9	32.9	65.5	45.9	1
756320	1	BAUER, WILLIAM A	290	19	114	17	8	CBDB	38	216369	1 CJDNCSTL	149	675	33.7	16.5	28.9	21.5	49.4	31.7	1
776441	1	BAUER, LOREN & WILLARD	290	19	114	17	9	AACC	38	216367	1 OPCJ	150	800	44.0	17.2	23.2	19.2	25.2	29.9	1
766102	1	MOLITOR BROTHERS LP	290	19	114	17	9	DACD	38		1 OPCJ	140	800	48.0	29.3	32.9	21.9	34.7	33.2	1
756358	1	CONZEMIUS, JOHN	290	19	114	17	10	AACC	38	170868	1 QWTA	140	900	34.5	15.1	22.6	22.6	30.2	18.9	1
766157	1	BECKER, EDWARD & NICHOLAS	290	19	114	17	10	BBDD	38	250020	1 QWTA	200	800	63.0	33.1	48.5	32.9	49.3	39.4	1
956195	1	ALMQUIST, EARLE R	290	19	114	17	10	DBD	38	250006	1	65	1,000	24.0	11.4	7.5	7.5	23.0	15.8	1
766204	1	RIES, NICK	290	19	114	17	11	BCBB	38		1 QWTA	160	800	46.0	24.0	7.7	30.0	20.0	45.0	1
766161	1	G M W	290	19	114	17	12	BCAA	38		1 OPCJ	120	800	39.2	21.2	19.9	8.5	27.9	10.5	1
766154	1	G M W	290	19	114	17	12	CACC	38		1 OPCJ	240	800	80.0	8.7	8.3	7.7	25.7	11.2	1
956196	1	ALMQUIST, EARLE R	290	19	114	17	12	DDB	38	250007	1	160	1,000	59.0	34.7	32.1	35.1	32.5	39.1	1
956197	1	ALMQUIST, EARLE R	290	19	114	17	13	ADBB	38	207645	1 CSTLCMTS	160	1,200	59.0	30.4	37.5	46.2	34.7	39.1	1
956199	1	ALMQUIST, EARLE R	290	19	114	17	13	CBB	38	250008	1	200	1,000	74.0	38.0	43.2	10.5	43.4	57.0	1

Dakota County

Permit #	Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Permitted Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
956198	1	ALMQUIST, EARLE R	290	19	114	17	13	DCBC	38	170855	1 OPDCCJDN	160	1,000	59.0	34.7	43.4	37.5	39.1	45.6	1
906018	1	HADLICH, BOB	290	19	114	17	14	BCAB	38	451541	1	15	200	1.6	0.0	0.3	0.3	0.3	0.0	1
796235	1	KINGSTON, JOHN	290	19	114	17	15	ABCB	38	159526	1 QWTA	70	1,000	20.0	6.0	12.3	24.7	32.8	27.7	1
776089	1	KIMMES, GERALD	290	19	114	17	15	BDC	38	426926	1	132	850	57.0	45.9	48.6	40.1	49.2	49.6	1
026093	1	TATERLAND LLP	290	19	114	17	15	CCC	38	457193	1 OPDC	65	450	25.1			8.1	21.2	15.8	1
906158	1	KIMMES, GERALD	290	19	114	17	15	DCAA	38	457165	1 QWTA	90	800	29.8	29.4	29.0	29.3	29.8	29.8	1
926001	1	MOLITOR BROTHERS LP	290	19	114	17	16	BDAA	38	487008	1 CJDNCSTL	135	750	44.0	22.8	31.1	22.9	37.9	33.3	1
776161	1	DLR LAND PARTNERSHP	290	19	114	17	16	CCAA	38	170856	1 OPDCCJDN	120	850	40.0	25.6	10.3	11.0	30.3	27.7	1
766014	1	MOLITOR BROTHERS LP	290	19	114	17	16	DADD	38	104125	1 CJDN	135	750	44.0	51.0	35.3	11.0	29.0	27.2	1
756077	1	BAUER, KEVIN R	290	19	114	17	17	CACC	38		1 OPCJ	213	1,000	60.0	15.4	25.0	12.0	39.0	32.0	1
756065	1	BAUER, LEO J	290	19	114	17	17	DBDD	38	216371	1 OPDCCJDN	132	1,000	33.0	9.4	16.2	13.7	18.8	20.5	1
766282	1	WYATT, GREG	290	19	114	17	18	AAA	38	249885	1 QWTA	10	350	3.5	2.1	2.2	0.9	1.7	1.8	1
745022	1	LEIFELD, PAUL	290	19	114	17	18	BAB	38	216362	1 OPDCCJDN	276	1,000	80.0	19.9	38.6	25.6	38.9	29.6	1
886257	1	BAUER, LEO J	290	19	114	17	18	CBCB	38	441871	1 OPDC	190	700	36.0	13.2	22.0	12.8	36.8	23.0	1
766162	1	GER-BES ENTERPRISES	290	19	114	17	18	CDBB	38	121809	1 OPDCCJDN	160	800	44.3	19.6	31.7	19.8	40.5	35.3	1
766235	1	SAUERESSIG, BRAD	290	19	114	17	19	CADB	38	121827	1 OPDCCJDN	152	1,000	44.0	14.3	14.3	8.0	13.8	16.1	1
756125	1	BAUER, KEVIN R	290	19	114	17	20	AACC	38	216370	1 OPCJ	240	1,000	80.0	16.0	25.2	14.4	37.5	28.0	1
816279	1	BESKAU, PAUL J	290	19	114	17	20	BBDD	38	171742	1 OPDCCJDN	135	750	38.3	21.1	23.7	26.4	35.4	17.2	1
766305	1	BAUER, RICHARD N	290	19	114	17	21	CCAA	38		1 OPCJ	160	1,000	53.1	29.1	33.8	16.6	48.9	40.2	1
816154	1	MOLITOR BROTHERS LP	290	19	114	17	22	ACBB	38	171734	1 OPDCCSTL	180	1,000	66.0	36.6	32.9	14.5	38.0	34.4	1
766249	1	KIEFFER, JAMES	290	19	114	17	22	BBDD	38		1 OPCJ	210	800	62.0	38.2	48.0	35.0	48.0	47.7	1
756351	1	SWANSON, LEONARD	281	19	114	17	22	CDDD	38	104340	1 OPDCCJDN	123	450	21.8	12.2	13.5	12.3	17.8	14.1	1
826027	1	MAHER, PATRICK K	290	19	114	17	23	ABDD	38	185946	1 QWTA	120	750	35.0	18.0	22.5	4.5	24.7	19.1	1
826141	1	CARLSON, KEITH	290	19	114	17	23	CDDD	38	171731	1 OPDCCJDN	90	1,000	30.0	20.7	16.2	11.4	27.0	17.1	1
776196	1	MAHER, PATRICK K	290	19	114	17	24	DCBD	38		1 OPCJ	270	1,000	90.0	36.0	42.0	18.0	54.0	45.0	1
896313	1	BAUMANN, JAMES	290	19	114	17	25	DACC	38	457134	1	100	800	26.9	12.5	17.6	5.9	23.5	21.8	1
996111	1	SAJEVIC, PAT	290	19	114	17	26	AB	38	255206	1	140	1,000	22.8	18.4	15.4	9.0	20.8	10.3	1
756337	1	KINGSTON, JOHN	290	19	114	17	27	CDB	38		1 OPCJ	140	750	41.0	7.8	15.6	15.1	30.2	44.5	1
866120	1	BELLWOOD OAKS GOLF COURSE	281	19	114	17	27	D	38	412494	1	75	1,000	30.0	20.3	22.3	14.8	27.9	16.2	1
776197	1	KIMMES, HERBERT & THOMAS	290	19	114	17	28	BDAC	38		1	75	500	25.0	6.8	9.8	5.6	12.1	11.2	1
776276	1	GER-BES ENTERPRISES	290	19	114	17	28	CCAA	38	132217	1 OPDCCJDN	160	1,000	53.3	16.1	28.0	21.1	34.2	22.7	1
766248	1	KINGSTON, JOHN	290	19	114	17	28	DDB	38		1 OPCJ	180	800	52.0	10.5	20.0	19.4	35.9	40.1	1
670241	1	BAUER, RICHARD N	290	19	114	17	29	AADD	38	207900	1 OPDC	220	1,000	61.0	35.0	38.9	16.2	60.4	52.3	1
776302	1	BAILEY NURSERIES	290	19	114	17	29	BBDD	38	170859	1 CJDNCSTL	230	800	76.6	34.5	23.4	5.5	10.5	19.5	1
756098	1	WOLLMERING, JAMES	290	19	114	17	29	CCAB	38	207655	1 OPDC	260	1,000	75.0	31.0	42.3	17.6	56.0	50.5	1
766163	1	KIMMES, HERBERT	290	19	114	17	29	DCAA	38	104139	1 OPDCCJDN	150	950	39.2	14.2	22.5	12.3	28.8	17.7	1
776186	1	WOLLMERING, JAMES	290	19	114	17	30	AAC	38		1 OPCJ	100	650	33.3	16.2	17.9	8.1	25.7	21.7	1
756119	1	BAUER, GENE	290	19	114	17	30	BAD	38		1 OPCJ	160	1,000	46.3	32.3	34.8	28.8	43.7	36.0	1
776135	1	DEUTSCH, DENNIS	290	19	114	17	30	CACC	38		1 OPCJ	135	800	45.0	19.2	28.9	9.0	29.3	31.9	1
661121	1	GER-BES ENTERPRISES	290	19	114	17	31	BCDD	38	213977	1 OPDCCJDN	160	1,000	46.0	20.8	29.0	26.8	39.7	20.1	1
766159	1	KIMMES, RAINER	290	19	114	17	32	AADA	38		1 OPCJ	190	800	62.0	22.6	20.6	23.1	36.1	27.9	1
766179	1	KIMMES, DUANE, MICHELLE, LOUISE	290	19	114	17	32	BCAA	38	255925	1 OPCJ	140	800	39.8	6.3	10.3	6.0	24.1	15.9	1
986016	1	KIMMES, RAINER	290	19	114	17	33	AA	38	251447	1	140	800	23.0	17.1	11.4	17.1	30.5	22.4	1
986017	1	KIMMES, RAINER	290	19	114	17	33	CD	38	251448	1	140	800	23.0	17.1	15.2	16.1	26.6	20.9	1
776357	1	KINGSTON, JOHN	290	19	114	17	34	BDB	38		1 OPCJ	140	1,000	41.0	4.0	13.2	12.4	30.9	30.6	1
986140	1	AGGREGATE INDUSTRIES-NCR INC	244	19	114	17	34	CA	38		5		400	35.0	7.3	10.5	21.6			1
796169	1	KIMMES & BAUER FARMS	290	19	114	17	34	DCBB	38	146804	1 OPDCCJDN	280	900	72.0	16.9	20.3	10.1	27.1	20.3	1
776272	1	FOX, GARY F	290	19	114	17	35	AAAD	38	121167	1 OPCJ	155	500	59.0	6.4	6.5	4.6	16.0	9.6	1
766191	1	REINARDY, EGINA	290	19	114	17	35	C	38	249772	1 OPCJ	120	800	38.6	13.0	19.5	9.7	26.1	19.5	1
776422	1	SWANSON, ALLAN	290	19	114	17	35	CAAA	38		1 OPCJ	320	1,000	107.0	12.0	28.4	10.8	30.0	18.0	1

Dakota County

Permit #	Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Permitted Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
886182	1	KIEFFER, WAYNE	290	19	114	17	36	AAC	38	437934	1 OPDC	96	700	28.0	6.7	12.3	4.5	18.1	16.3	1
776137	1	BAUER, GORDON & ALFRED	290	19	114	18	1	ACBB	38		1 OPCJ	65	800	19.0	14.4	23.3	6.9	15.5	16.2	1
756115	1	ABRAHAMSEN, HANS	290	19	114	18	1	CDA	38	121813	1 QWTA	238	1,000	63.0						1
896349	1	STOFFEL, LEWELLYN	290	19	114	18	2	CCA	38	437199	1 CJDN	140	750	46.0	24.9	32.1	10.7	28.5	24.9	1
796142	1	GER-BES ENTERPRISES	290	19	114	18	3	CBC	38	146857	1 OPDCCJDN	90	600	26.0	10.1	15.2	18.4	24.4	17.0	1
776087	1	ROONEY, LUCY	290	19	114	18	3	CBD	38	170866	1 OPDCCJDN	140	700	41.0	12.0	25.9	8.6	19.4	15.6	1
776046	1	FOX, HENRY & RICHARD	290	19	114	18	4	B	38		1 OPCJ	160	1,000	52.1	14.8	28.8	14.8	45.6	46.0	1
766083	1	BONDERSON, CHERYL & LUCY ROONEY	290	19	114	18	4	DAC	38	255852	1 OPCJ	135	750	40.6	14.0	16.2	12.9	19.4	22.0	1
776250	1	BAILEY NURSERIES	290	19	114	18	5	CDBB	38		1 OPCJ	150	1,000	50.0	3.9	8.6	5.9	6.9	8.2	1
776295	1	FRANDRUP, DONALD	290	19	114	18	5	DBDD	38		1 OPCJ	80	1,100	53.3	6.1	6.1	6.1	7.5	6.0	1
776076	1	MARTHALER, JOE	290	19	114	18	7	ADDC	38		1 OPCJ	148	800	48.2	9.2	20.0		22.1	20.5	1
766381	1	VOLKERT, EDWIN K	290	19	114	18	8	BCAA	38		1 OPCJ	240	1,100	78.2	16.8	22.4	8.3	26.5	6.5	1
816183	1	KIIHBAUCH, PETER	290	19	114	18	8	CBDD	38	171743	1 OPDCCJDN	120	800	30.0	13.0	8.6	7.5	25.9	24.8	1
776074	1	FRANDRUP, FRANK	290	19	114	18	9	ABDD	38	170864	1 OPDCCSTL	120	800	28.3	27.9	5.7	19.2	6.2	5.9	1
776032	1	BAUER, DONALD	290	19	114	18	9	BCAA	38	255952	1 OPCJ	165	800	46.9	12.4	28.6	16.7	32.1	28.8	1
776157	1	FRANDRUP, DONALD	290	19	114	18	9	CCAA	38		1 OPCJ	100	700	33.3	6.9	6.9	6.9	7.0	7.1	1
766302	1	FRANDRUP, FRED	290	19	114	18	9	DCB	38		1 OPCJ	200	800	57.0	9.2	13.8	9.2	17.2	16.1	1
766182	1	GIRGEN, RON	290	19	114	18	10	ACAA	38	159510	1 CJDNCFRN	200	800	66.7	25.7	51.4	12.8	42.9	27.4	1
766225	1	YANZ, TOM	290	19	114	18	11	AAC	38		1 OPCJ	170	800	50.0	24.1	40.3	20.1	32.2	28.2	1
766158	1	SIEBENALER, JOE	290	19	114	18	11	B	38		1 OPCJ	130	800	39.2	15.8	36.0	17.7	48.9	48.4	1
796228	1	STOFFEL, LEWELLYN	290	19	114	18	11	CCCA	38	159539	1 OPDCCJDN	120	500	35.0	12.6	23.6	3.3	10.8	10.8	1
756152	1	STOFFEL, LEWELLYN	290	19	114	18	12	CCAA	38	121816	1 OPDCCJDN	80	550	21.0	8.4	13.4	7.5	13.4	9.2	1
766165	1	STOFFEL, NICK	290	19	114	18	12	CCAA	38	121849	1 OPDCCJDN	80	700	27.0	11.0	22.1	10.9	17.3	22.1	1
896327	1	LEIFELD, PAUL	290	19	114	18	13	AAA	38	179822	1 OPDC	54	600	15.5	4.7	14.6	3.4	12.4	6.7	1
756100	1	GER-BES ENTERPRISES	290	19	114	18	13	BDCB	38	121850	1 OPDCCJDN	240	1,000	65.0	36.7	47.5	49.8	60.0	47.3	1
756096	1	GERGEN, JAMES AND ANN	290	19	114	18	13	CBDA	38	216366	1 OPDCCJDN	265	1,000	75.9	48.5	67.6	52.1	74.8	71.9	1
776210	1	STOFFEL, ROGER G	290	19	114	18	14	ADBB	38		1 OPCJ	200	1,000	66.6	20.2	31.5	34.7	44.1	18.5	1
776136	1	WAGNER, EARL	290	19	114	18	14	DCAA	38		1 OPCJ	290	1,000	96.6	14.0	26.1	13.5	34.6	27.8	1
756108	1	GIRGEN, NORBERT	290	19	114	18	15	CAD	38		3 VERMILLION RIVER	175	500	20.0	6.6	9.7	3.3	11.5	10.3	1
776130	1	RIES, JOSEPH A	290	19	114	18	17	AAB	38	129239	1 OPDC	260	1,200	86.0	6.0	6.0	4.8	84.7	6.3	1
776304	1	MARTHALER INVESTMENTS	290	19	114	18	17	BCA	38		1 OPCJ	240	700	68.4	14.5	18.6	14.0	19.4	19.9	1
776303	1	RIES, GREG & GARY	290	19	114	18	17	DCB	38		1 OPCJ	140	1,000	46.6	10.2	24.0	14.1	27.7	16.0	1
756130	1	HINCE, JOSEPH	290	19	114	18	19	DA	38		3 VERMILLION	75	550	13.3	10.9	11.1	5.6	12.2	12.2	1
776080	1	BROCHMAN, RAYMOND J	290	19	114	18	20	BADD	38		1 OPCJ	140	800	46.7	15.9	14.8	9.6	25.6	22.5	1
745125	1	THERRES, NAOMI	290	19	114	18	21	A	38		3 VERMILLION	140	500	22.8	9.1	6.8	11.2	9.8	15.5	1
766207	1	KUMMER, MARTIN	290	19	114	18	21	BBDD	38	129237	1 OPDCCJDN	160	700	44.3	16.6	20.6	6.4	13.1	32.4	1
766244	1	RAWAY, HAROLD	290	19	114	18	21	DBDD	38		1 OPCJ	120	800	39.2	11.9	14.9	6.6	13.4	8.1	1
776355	1	RIES, GREG & GARY	290	19	114	18	22	ACCC	38	132218	1 QWTACJDN	135	900	45.0	11.3	21.0	13.1	19.9	12.9	1
926105	2	VERMILLION, CITY OF	211	19	114	18	22	BAAA	38	534094	1 QBAA		500	25.0	20.4	27.8	24.7	26.7	22.2	
926105	1	VERMILLION, CITY OF	211	19	114	18	22	BACA	38	502689	1 CMSH		500	25.0	0.0	0.0	0.0	0.0	0.0	1
766265	1	ROTHER, LEON	290	19	114	18	22	CACC	38		1 OPCJ	210	800	55.8	28.0	44.7	24.7	69.5	48.8	1
776189	1	WOLLMERING FAMILY TRUST	290	19	114	18	22	DBDD	38		1 OPCJ	120	800	40.0	28.5	33.6	26.5	18.0	15.3	1
926088	1	GERGEN, JAMES	290	19	114	18	23	AAC	38	478457	1 OPDCCSTL	140	800	23.0	21.0	24.4	17.9	39.7	32.0	1
856175	1	GERGEN, JACOB	290	19	114	18	23	BACD	38	404814	1 OSTP	140	700	41.0	0.3	0.3	0.2	33.3	34.3	1
816280	1	GER-BES ENTERPRISES	290	19	114	18	24	AACC	38	171735	1 OPDCCJDN	190	700	55.0	15.8	31.9	28.2	48.9	33.9	1
766198	1	BEISSEL, DONALD	290	19	114	18	24	CA	38		1	220	800	73.3	31.6	46.8	20.8	51.7	40.8	1
766390	1	SIEBENALER, CHARLES	290	19	114	18	24	DCAA	38		1 OPCJ	198	750	32.5	10.5	9.3	7.7	13.5	18.0	1
796312	1	BESKAU, PAUL J & J P GERG	290	19	114	18	25	CD	38	146815	1 OPCJ	110	550	31.0	14.2	16.4	19.2	24.0	18.7	1
691291	1	ANGELL, ROBERT B JR	290	19	114	18	25	DDCD	38		1 OPCJ	200	1,000	40.0	19.6	21.5	8.9	39.1	35.8	1
776061	1	BROCHMAN, LEONARD	290	19	114	18	26	ACAA	38	132225	1 OPDCCJDN	96	1,000	28.0	25.1	24.1	9.0	20.3	13.7	1

Dakota County

Permit #	Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Permitted Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
756153	1	SIEBENALER, JOHN B	290	19	114	18	26	CDCB	38	256278	1 OPCJ	190	750	54.0	20.6	38.0	25.9	41.0	33.4	1
766134	1	TUTEWOHL, DOROTHY	290	19	114	18	27	BBDD	38		1 OPCJ	135	900	45.5	21.6	33.1	12.3	29.8	21.4	1
776264	1	SAUERESSIG, BRAD	290	19	114	18	27	CBDD	38		1 OPCJ	143	1,000	41.0	9.7	7.2	1.8	15.1	12.9	1
776254	1	KIMMES, ROGER	290	19	114	18	27	CCBB	38		1 CJDN	90	800	30.0	7.3	19.5	9.7	17.1	14.6	1
776072	1	BAUER, BERNARD M	290	19	114	18	28	CAD	38		1 OPCJ	188	700	62.0	21.8	30.6	12.1	29.9	21.3	1
766261	1	BAUER, BERNARD M	290	19	114	18	28	CDC	38	242105	1 OPDCCSTL	142	650	47.0	20.2	31.5	14.9	36.5	28.1	1
766212	1	GER-BES ENTERPRISES	290	19	114	18	30	CAD	38	251488	1 OPCJ	268	800	73.4	27.6	42.3	49.1	64.9	28.7	1
776409	1	GERSTER, RICK	290	19	114	18	31	CAB	38		1 OPCJ	80	750	31.0	3.7	4.3	1.7	7.4	4.9	1
776172	1	BJL FARMS INC	290	19	114	18	32	CCA	38	250034	1 OPCJ	151	500	45.0	14.0	21.6	7.2	37.8	21.4	1
766262	1	BAUER, JOHN J	290	19	114	18	33	BBCC	38	251909	1 OPCJ	120	600	40.0	15.0	17.6	12.0	24.9	12.3	1
776071	1	BAUER, JOHN J	290	19	114	18	33	BDAA	38	250188	1 OPCJ	235	950	76.0	34.3	31.0	16.1	37.3	35.4	1
731431	1	BROCHMAN, MELVIN	290	19	114	18	34	ACA	38	216372	1 CJDNCSTL	220	1,000	63.0	21.9	36.0	33.7	44.0	33.9	1
766274	1	WAGNER, AL JR	290	19	114	18	35	CBC	38	249927	1 OPCJ	220	1,100	64.0	3.0	2.8	50.0	7.0	70.0	1
700208	2	ANGELL, FRED R	290	19	114	18	36		38		1	100		33.3	6.7	9.0	3.7	16.2	14.1	1
700208	1	ANGELL, FRED R	290	19	114	18	36	BBD	38		1 OPCJ	100		33.3	8.6	9.1	2.8	10.8	14.4	1
016050	1	NRG PROCESSING SOLUTIONS LLC	248	19	114	19	1	BCD	38	590636	1 OPDCCJDN		250	50.0		1.4	0.0	0.2	0.0	1
026053	1	PAHL FARMS INC	290	19	114	19	3	DCB	38	651999	1 OPCJ	100	800	27.0			4.8	0.3	29.2	1
776523	1	U OF MN	290	19	114	19	4	BBA	38	207606	1 CJDN	113	225	4.2						3
896100	1	U OF MN	290	19	114	19	4	BCC	38	185278	1	75	300	25.0	0.1	1.9	0.2	0.1	10.4	1
976143	1	BARTON SAND & GRAVEL	279	19	114	19	6	B	38		5 EMPIRE PIT 781		750	2.0	1.2	1.2	1.2	1.3	1.3	1
906285	1	CEMSTONE PRODUCTS	244	19	114	19	7	BCC	38	462149	1 OPDC		400	10.0	0.1	3.8	9.7	9.9	3.9	1
053006	1	NEWMAN GOLF INVESTORS LP	281	19	114	19	17	CCC	38	457156	1 OPDC	22	600	16.0					7.0	1
806194	2	EMPIRE TOWNSHIP	211	19	114	19	19	DADA	38	171018	1 CJDN		1,100	52.0	9.3	22.5	16.3	26.7	31.2	1
033218	1	KNUTSON CONSTRUCTION	252	19	114	19	21	CD	38		1		20,000	1,560.0				572.8	1,443.6	1
766010	1	METROPOLITAN COUNCIL	277	19	114	19	21	DBC	38		1		120	21.0	3.1	3.5	1.2	1.1	0.6	1
816029	1	MILES, JAMES G	290	19	114	19	22	BCD	38		1 OPCJ	180	1,000	52.0						1
776246	2	MILES, JAMES G	290	19	114	19	22	CDB	38		3 VERMILLION	140	500	41.0						1
776246	1	MILES, JAMES G	290	19	114	19	22	DCD	38		3 VERMILLION	140	500	41.0						1
776480	1	MILES, JAMES G	290	19	114	19	22	DDBC	38	207706	1 OPDCCJDN	160	640	26.6	9.5	18.1	14.4	21.6	19.5	1
776212	1	KAMEN, DAVID	290	19	114	19	23	DDBB	38	251917	1 QWTA	170	750	48.3	3.3	8.4	3.7	10.1	9.8	1
776077	1	BROCKMAN, LAWRENCE	290	19	114	19	24	ACBB	38		1 OPCJ	160	800	50.8	5.4	10.4	8.1	16.1	6.6	1
766313	1	SJH REAL ESTATE LLC	290	19	114	19	24	DBCA	38	253028	1 OPCJ	35	500	10.0			15.9	14.8	4.5	1
766059	1	SACHS, MARIE	290	19	114	19	24	DDB	38		3 VERMILLION	15	500	4.4						1
936148	1	BRAUN, CRAIG	284	19	114	19	25	ADD	38	481516	1	160	600	26.1		1.8		8.6	13.7	1
776268	1	DERNER, ANTHONY F	290	19	114	19	26	BABC	38		1 QWTA	120	550	40.0	3.1	12.6	5.4	7.9	4.0	1
680770	1	MILES, JAMES G	290	19	114	19	27	ABC	38		1 OPCJ	160	1,000	48.0	19.6	30.0	30.2	44.2	28.5	1
776479	1	MILES, JAMES G	290	19	114	19	27	ACCD	38	232245	1 QWTA	120	640	26.6	6.8	15.2	15.1	15.5	13.7	1
936167	1	BRAUN, CRAIG	290	19	114	19	28	AAB	38		1	76	550	21.8				3.6	6.0	1
766406	1	BETZOLD, GLENN & MELISSA	290	19	114	19	28	DBAC	38	255633	1 OPCJ	320	1,000	84.7						1
806208	1	DEVNEY, JOHN	290	19	114	19	29	DACA	38	163616	1 QWTA	70	600	20.0	7.2	13.5		14.4	14.4	1
806194	1	EMPIRE TOWNSHIP	211	19	114	19	30	ADDA	38	207521	1 CJDN		1,100	52.0	31.6	23.8	22.7	24.0	22.1	1
856262	2	MARIGOLD FOODS INC	241	19	114	19	31	ABD	38		1 CMTS		2,600	170.0	9.8	65.1	95.0	14.8	57.3	1
856262	1	MARIGOLD FOODS INC	241	19	114	19	31	ABDA	38	242346	1 OPDCCJDN		2,600	170.0	0.1	3.4		0.5	59.3	1
590725	1	FARMINGTON, CITY OF	211	19	114	19	31	ACDB	38	200932	1 OPDCCJDN		4,400	530.0	33.6	42.0	86.4	133.3	100.5	2
590725	2	FARMINGTON, CITY OF	211	19	114	19	31	ACDB	38	200934	1 OPDCCJDN		4,400	530.0						2
590725	3	FARMINGTON, CITY OF	211	19	114	19	31	CADC	38	201154	1 OPDCCJDN		4,400	530.0	35.4	11.8	29.8	68.3	61.1	1
986144	EX-1	FEDERAL AVIATION ADMINISTRATION	266	19	114	19	31	CBA	38	608391	1 QWTA		700	350.0	47.3	47.3	47.3	47.3	47.3	1E
986144	EX-2	FEDERAL AVIATION ADMINISTRATION	266	19	114	19	31	CBA	38	608392	1 QWTA		700	350.0	47.3	47.3	47.3	47.3	47.3	1E
986144	EX-3	FEDERAL AVIATION ADMINISTRATION	266	19	114	19	31	CBA	38	608393	1 QWTA		700	350.0	47.3	47.3	47.3	47.3	47.3	1E
986144	EX-4	FEDERAL AVIATION ADMINISTRATION	266	19	114	19	31	CBA	38	608395	1 QWTA		700	350.0	52.0	52.0	52.0	52.0	52.0	1E
													1590	69.0	53.8	116.2	201.6	161.6		

194 408 43 39.0 58.7 53.3

DNR Water Appropriation Permits — Active Permits - By County & Location

6/23/2005

Dakota County

Permit #	Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
986144	EX-5	FEDERAL AVIATION ADMINISTRATION	266	19	114	19	31	CBA	38	608394	1 QWTA		700	350.0	55.1	55.1	55.1	55.1	55.1	1E
986144	EX-6B	FEDERAL AVIATION ADMINISTRATION	266	19	114	19	31	CBA	38	608396	1 QWTA		700	350.0	62.1	62.1	62.1	62.4	62.4	1E
986144	EX-7B	FEDERAL AVIATION ADMINISTRATION	266	19	114	19	31	CBA	38	608397	1 QWTA		700	350.0	19.8	19.8	19.8	19.7	18.0	1E
043128	1	PETERSON, DONALD L	290	19	114	19	32	DDA	38	651708	1 OPDC	130	550	39.0				12.1	2.7	1
776001	1	BETZOLD, GEORGE A	290	19	114	19	33	ABC	38		1 OPCJ	240	500	64.8	5.7	5.6		22.4		1
776523	4	U OF MN	290	19	114	19	33	CDBB	38	207617	1 CJDN	113	225	4.2	0.3	1.2	0.9	0.6	0.2	1
996078	1	MULVIHILL, TIMOTHY	290	19	114	19	34	DACC	38	608186	1 OPDC	250	875	71.0	53.9	55.1	35.3	48.9	49.5	1
996101	1	JUENKE, JON	290	19	114	19	35	CBC	38	120161	1 OPDCCJDN	70	960	12.0	6.5	8.6	10.9	6.0	7.4	1
766081	1	JUENKE, JON	290	19	114	19	35	CDA	38		1 OPCJ	140	800	41.0	16.8	28.8	14.5	16.0	9.4	1
731434	1	LOUIS, CHARLES	290	19	114	19	36	ABA	38	226842	1 OPDCCJDN	155	600	22.8	12.4	16.2	7.7	23.9	14.6	1
986057	1	AGGREGATE INDUSTRIES-NCR INC	248	19	114	20	1	ACA	38	186301	1 CJDN		20	25.0	2.6	3.0	4.7	5.2	5.3	1
006116	1	AGGREGATE INDUSTRIES-NCR INC	244	19	114	20	1	ACB	38		5		4,000	196.0	144.9	81.6	180.0	120.6	116.8	1
986058	1	AGGREGATE INDUSTRIES-NCR INC	248	19	114	20	1	ACB	38	251492	1 CJDN		35	14.0	3.3	3.2	3.0	3.3	3.1	1
043048	1	ENEBAK CONSTRUCTION CO	264	19	114	20	1	DB	38		6		2,000	300.0						1
806107	4	LAKEVILLE, CITY OF	211	19	114	20	3	CBDB	38	212650	1 CJDN		16,800	2,670.0	48.1	49.9	1.9	49.5		1
806107	2	LAKEVILLE, CITY OF	211	19	114	20	3	CCAD	38	207708	1 CJDN		16,800	2,670.0	1.8	10.7		1.5		1
043096	1	CRYSTAL LAKE GOLF CLUB	281	19	114	20	5	CDB	33	530065	1 OPDCCJDN	50	500	35.0					35.0	1
043096	POND	CRYSTAL LAKE GOLF CLUB	281	19	114	20	5	CDB	33		5	50	500	35.0						1
806107	17	LAKEVILLE, CITY OF	211	19	114	20	8	BBCA	38	694913	1 OPDCCSTL		16,800	2,670.0						1
806107	13	LAKEVILLE, CITY OF	211	19	114	20	8	CBBB	38	596650	1 OPCJ		16,800	2,670.0	267.2	133.9	76.2	168.1	60.3	1
590725	4	FARMINGTON, CITY OF	211	19	114	20	14	DAAA	38	235586	1 CJDN		4,400	530.0	233.8	218.2	158.0	137.8	79.3	1
806107	14	LAKEVILLE, CITY OF	211	19	114	20	17	ACAA	38	603073	1 OPCJ		16,800	2,670.0		80.5	19.1	111.2	92.8	1
806107	11	LAKEVILLE, CITY OF	211	19	114	20	17	BBBB	38	554215	1 OPCJ		16,800	2,670.0	121.7	278.7	269.5	95.2	34.2	1
806107	10	LAKEVILLE, CITY OF	211	19	114	20	17	BCCD	38	554193	1 OPCJ		16,800	2,670.0	318.4	294.2	352.6	356.8	380.6	1
806107	12	LAKEVILLE, CITY OF	211	19	114	20	17	BDDD	38	562991	1 OPCJ		16,800	2,670.0	267.2	155.0	34.6	142.5	44.4	1
806107	8	LAKEVILLE, CITY OF	211	19	114	20	18	ACDD	38	433296	1 CJDN		16,800	2,670.0	128.0	116.6	80.0	189.5	465.9	1
806107	6	LAKEVILLE, CITY OF	211	19	114	20	18	BAAB	38	161409	1 CJDNCSTL		16,800	2,670.0	560.3	554.4	602.2	562.0	283.2	1
806107	9	LAKEVILLE, CITY OF	211	19	114	20	18	CBBA	38	554192	1 OPCJ		16,800	2,670.0	129.1	161.8	233.8	211.5	367.3	1
806107	16	LAKEVILLE, CITY OF	211	19	114	20	18	DDDA	38	655907	1 CJDN		16,800	2,670.0				22.2	167.3	1
806107	15	LAKEVILLE, CITY OF	211	19	114	20	19	ADAA	38	651737	1 CJDN		16,800	2,670.0		83.4	26.0	269.4	173.2	1
776019	1	CROSS NURSERIES INC	285	19	114	20	19	DDA	38	126526	1 OSTPOPDC	16	300	6.0					31.9	1
590725	5	FARMINGTON, CITY OF	211	19	114	20	24	CBB	38	603051	1 CJDN		4,400	530.0	168.3	245.7	205.1	211.4	132.8	1
806107	3	LAKEVILLE, CITY OF	211	19	114	20	33	ACBD	38	207727	1 CJDN		16,800	2,670.0	7.4	17.7	1.3	7.4		1
826122	1	DEVENSHIRE FARMS	290	19	114	20	35	CAD	38		3	125	600	20.0	16.8	18.9	7.2	19.0	14.4	1
776233	1	DEVNEY, JOHN	290	19	114	20	35	DDAB	38		1 QWTA	115	1,000	33.0	10.8	17.1	5.4	21.6	14.4	1
816225	1	PETERSON, DONALD L	290	19	114	20	36	BDCC	38	175910	1 QBUA	132	700	33.0	4.4	9.1		12.9	2.8	1
976162	1	PETERSON, DONALD L	290	19	114	20	36	CCD	38	573804	1 QWTA	76	500	22.0	2.5	4.1	1.0	7.9	4.4	1
610128	2	ADELMANN, WILLIAM R	290	19	114	20	36	D	38		3 VERMILLION	90	500	12.0		2.3	2.2			1
700562	1	ADELMANN, WILLIAM R	290	19	114	20	36	DCAA	38	207519	1 QWTA	115	800	33.0	11.3	22.0	4.9	28.9	9.1	1
620547	P4	NORTHERN GOPHER GOLF INC	281	19	114	21	11	CDD	33		1	130	600	60.0						3
926155	3	QUEEN ANNE COURTS LTD PARTNERSHIP	212	19	114	21	12	CAB	33	664152	1 OPDC		250	15.0		1.7	11.9	14.4	13.0	1
926155	1	QUEEN ANNE COURTS LTD PARTNERSHIP	212	19	114	21	12	CACA	33	207768	1 CJDN		250	15.0	12.5	8.9				3
926155	2	QUEEN ANNE COURTS LTD PARTNERSHIP	212	19	114	21	12	CACA	33	207767	1 OSTP		250	15.0						2
620547	1	NORTHERN GOPHER GOLF INC	281	19	114	21	14	BBDA	38	236156	1 OPDCCJDN	130	600	60.0	16.4	15.9	8.1	24.5	38.7	1
620547	P1	NORTHERN GOPHER GOLF INC	281	19	114	21	14	BBDA	38		5	130	600	60.0	29.6	26.4	22.5	52.0	10.4	1
806107	7	LAKEVILLE, CITY OF	211	19	114	21	25	CBAA	38	161439	1 CJDN		16,800	2,670.0	43.0	60.8	0.2	26.0	0.0	1
033006	1	RIVER CITY ASPHALT INC	244	19	114	21	26	AC	38		5		300	11.0			9.6	8.3	13.5	1
986151	1	DUNHAM, DENNY	281	19	114	21	36	BD	38		5	12	100	4.0	0.4	0.4	0.2	0.3	0.4	1
776147	1	SORG, RANDY & WILLIAM	290	19	115	17	18	CACD	20	207631	1 CJDN	240	1,000	80.0	21.1	16.2	10.3	18.7	13.0	1
756194	2	HASTINGS, CITY OF	211	19	115	17	27	ADAA	20	207662	1 CJDN		3,270	1,068.0						3

DNR Water Appropriation Permits — Active Permits - By County & Location

6/23/2005

Dakota County

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756194	1	HASTINGS, CITY OF	211	19	115	17	27	CBBC	20	207821	1 CJDNCIGL		5,270	1,000.0	0.0	0.0				1
786167	1	IND SCHOOL DISTRICT 200	283	19	115	17	27	CBC	20	255924	1 OPCJ	25	250	6.0	4.9	5.8				1
756194	7	HASTINGS, CITY OF	211	19	115	17	28	ADA	20	509053	1 CJDN		5,270	1,000.0	204.7	305.8	284.7	268.3	291.6	1
756194	3	HASTINGS, CITY OF	211	19	115	17	28	BCAC	20	206333	1 CJDN		5,270	1,000.0	186.2	83.5	6.9	60.8	21.7	1
756194	5	HASTINGS, CITY OF	211	19	115	17	29	ACDD	20	207639	1 CJDNCSTL		5,270	1,000.0	198.5	183.9	28.5	89.7	128.8	1
053014	2	IND SCHOOL DISTRICT 200	283	19	115	17	29	BBB	38	672578	1 CFIG	64	650	45.0					9.3	1
053014	1	IND SCHOOL DISTRICT 200	283	19	115	17	29	BBC	38	603062	1 CFIG	64	650	45.0					12.4	1
816020	1	BAUER, LOREN & WILLARD	290	19	115	17	31	DDD	38		3 VERMILLION RIVER	50	500	7.0						1
866243	1	HASTINGS COUNTRY CLUB	281	19	115	17	32	ADAD	38	207640	1 CJDN	33	1,250	35.0	33.4	32.1	14.8	31.2	16.2	1
756194	4	HASTINGS, CITY OF	211	19	115	17	32	DABB	38	207993	1 CJDN		5,270	1,000.0	41.5	44.5	344.4	372.3	283.1	1
866243	2	HASTINGS COUNTRY CLUB	281	19	115	17	33	BBC	38	672739	1 CJDN	33	1,250	35.0					10.8	1
856224	2	MN VETERANS HOMES BOARD	213	19	115	17	34	ACBD	38	236104	1 CMTS		950	15.0	4.0	0.1	0.3	1.4	0.1	1E
856224	3	MN VETERANS HOMES BOARD	213	19	115	17	34	ACCB	38	207642	1 CJDN		950	15.0	16.7	6.9	8.4	7.6	8.4	1E
756278	1	CON AGRA FLOUR MILLING CO	241	19	115	17	34	BCAC	38	251398	1 OPCJ		40	22.0	3.9	3.8	4.1	13.9	6.6	1
756194	6	HASTINGS, CITY OF	211	19	115	17	34	CDDB	38	207643	1 CJDNCSTL		5,270	1,000.0	299.3	284.2	125.0	172.1	191.0	1
936152	1	BARTON SAND & GRAVEL	244	19	115	17	35	ABA	38		5 PIT 737		750	43.0	1.2	1.2	1.2	1.3	1.3	1
006099	1	AGGREGATE INDUSTRIES-NCR INC	244	19	115	17	35	ABC	38		5		30	10.0						1
846178	1	AGGREGATE INDUSTRIES-NCR INC	244	19	115	17	35	DBC	38		6		900	120.0	0.4					1
786194	1	SORG, LOREN	290	19	115	18	13	DCD	20		1 OPCJ	120	700	40.0	14.1	26.0	6.9	12.1	13.0	1
043162	1	METROPOLITAN COUNCIL	252	19	115	18	17		38		1 QWTA		4,000	500.0						1
650886	1	CF INDUSTRIES INC	248	19	115	18	17	C	20		1		1,000	9.0	4.4	3.7	3.8	2.5	3.5	1
650886	2	CF INDUSTRIES INC	248	19	115	18	17	C	20		1		1,000	9.0	1.2					1
986069	1	FLINT HILLS RESOURCES LP	271	19	115	18	17	CB	20		1 QWTA		900	480.0	0.0					1
986069	2	FLINT HILLS RESOURCES LP	271	19	115	18	17	CB	20		1 QWTA		900	480.0	28.5	24.5	29.6	13.3	4.1	1
986069	9	FLINT HILLS RESOURCES LP	271	19	115	18	18	AB	20		1 QWTA		900	480.0						1
986069	6	FLINT HILLS RESOURCES LP	271	19	115	18	18	AC	20		1 QWTA		900	480.0	46.5	44.1	33.1	21.0	22.4	1
986069	7	FLINT HILLS RESOURCES LP	271	19	115	18	18	AC	20		1 QWTA		900	480.0				9.5	77.1	1
986069	8	FLINT HILLS RESOURCES LP	271	19	115	18	18	AC	20		1 QWTA		900	480.0						1
986069	5	FLINT HILLS RESOURCES LP	271	19	115	18	18	AD	20		1 QWTA		900	480.0	20.3	11.2	21.0	10.7	5.9	1
560029	1	CONTINENTAL NITROGEN & RESOURCES	246	19	115	18	18	CCDC	38	208407	1 OPDCCJDN		2,000	420.0						1
986069	3	FLINT HILLS RESOURCES LP	271	19	115	18	18	DA	20		1 QWTA		900	480.0	29.8	40.9	17.1	44.9	58.1	1
986069	4	FLINT HILLS RESOURCES LP	271	19	115	18	18	DA	20		1 QWTA		900	480.0	14.8	23.4	10.1	5.7	4.6	1
043162	2	METROPOLITAN COUNCIL	252	19	115	18	19		38		1 QWTA		4,000	500.0						1
661285	1	FLINT HILLS RESOURCES LP	246	19	115	18	19	ABBB	33	208410	1 CJDNCJDN		200	100.0	45.0	16.8	5.3	3.3		1
661285	2	FLINT HILLS RESOURCES LP	246	19	115	18	19	ABC	33	255723	1 CJDNCJDN		200	100.0	32.8	12.1				1
560029	2	CONTINENTAL NITROGEN & RESOURCES	246	19	115	18	19	BABD	38	208411	1 OPDCCJDN		2,000	420.0	33.4	28.4	11.7	11.6	30.9	1
006035	1	METROPOLITAN COUNCIL	277	19	115	18	19	DCCC	38	235755	1 OPDC		215	15.0	4.1	1.3	4.9	9.1	9.2	1
043162	3	METROPOLITAN COUNCIL	252	19	115	18	20		38		1 QWTA		4,000	500.0						1
986095	1	SPECTRO ALLOYS CORP	247	19	115	18	20	BBD	20	251594	1 CJDN		100	5.0	1.5		7.2	1.9	2.0	1
986095	2	SPECTRO ALLOYS CORP	247	19	115	18	20	BBD	20	404849	1 CJDN		100	5.0		3.2				1
916005	1	SKB ENVIRONMENTAL INC	279	19	115	18	20	CBB	38	482886	1		500	3.5	0.9	0.7	0.3	2.1	4.5	1
786034	1	PINE BEND DEVELOPMENT CO	290	19	115	18	20	DDDC	38		1 OPCJ	80	1,000	26.7	10.8	17.3	10.8	17.3	15.2	1
776133	1	PINE BEND DEVELOPMENT CO	290	19	115	18	21	DCDD	20	214194	1 OPDCCJDN	190	800	63.3	25.8	46.4	25.8	41.2	36.1	1
776223	1	SORG, LOREN	290	19	115	18	24	ADBD	20		1 OPCJ	100	800	33.3	19.0	19.0	10.5	19.9	13.5	1
776213	1	BAUER, FRANK	290	19	115	18	26	ACBB	38		1 OPCJ	100	500	28.0	6.9	6.1	6.9	9.2	17.2	1
786180	1	SORG, G L R & W	290	19	115	18	26	ADA	38		1 OPCJ	120	700	40.0	10.3	24.7	5.2	10.3	6.9	1
745001	1	BAUER, JUANITA	290	19	115	18	26	DCAD	38	233121	1 QWTA	150	750	42.6	13.9	16.5	13.9	33.0	31.6	1
016078	POND	FURLONG,TOM AND CARRIE	281	19	115	18	27	CB	38		5	185	1,200	130.0						1
016078	NORTH	FURLONG,TOM AND CARRIE	281	19	115	18	27	CBCB	38	585116	1 OPDC	185	1,200	130.0	28.0	69.5	1.5	0.4	1.0	1
016078	SOUTH	FURLONG,TOM AND CARRIE	281	19	115	18	27	CBCB	38	249861	1 OPCJ	185	1,200	130.0	28.0	75.6	51.0	86.1	123.6	1

864 982 795 790 863 916

DNR Water Appropriation Permits — Active Permits - By County & Location

6/23/2005

Dakota County

Permit # Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Permitted Acres	Permitted GPM	Permitted MG/Y	Reported Pumping MG 2000	2001	2002	2003	2004	Stat
766258 - 1	PINE BEND DEVELOPMENT CO	290	19	115	18	28	CACB	38		1 OPCJ	270	800	73.4	33.2	49.9	39.9	48.0	47.5	1
766257 - 1	PINE BEND DEVELOPMENT CO	290	19	115	18	29	BADD	38		1 OPDCCJDN	160	800	52.0	15.6	28.1	15.6	24.9	21.8	1
896010 - 1	RAHN, RAYMOND A	281	19	115	18	30	ABCD	38	438525	1 OPDC	55	500	30.0	16.0	16.2	7.6	6.9	4.3	1
766245 - 1	PINE BEND DEVELOPMENT CO	290	19	115	18	30	ADAA	38		1 OPDCCJDN	120	800	39.1	13.0	29.3	16.2	26.0	22.8	1
926040 - 1	RAHN, RAYMOND A	281	19	115	18	30	BAB	38	475934	1	45	300	36.7	6.4	6.7	6.3	6.8	3.5	1
766199 - 1	FOX, HENRY J	290	19	115	18	32	BA	38		1 OPCJ	240	1,000	66.6	14.8	27.8	15.8	48.5	44.1	1
766277 - 1	ABRAHAMSEN, HANS	290	19	115	18	32	CBCC	38		1 OPCJ	200	800	62.2						1
776437 - 1	FAHEY, THOMAS W	290	19	115	18	32	DBDD	38	132226	1 OPDCCJDN	290	1,000	82.4	12.3	36.5	16.9	42.8	35.9	1
756253 - 1	PETERSON, DONALD L	290	19	115	18	34	ADBB	38	125904	1 OPDC	100	600	26.0	3.0	3.7	1.3	9.5	4.3	1
745150 - 1	ROTTY, ROBERT	290	19	115	18	35	BCA	38	216361	1 OPCJ	160	750	44.4	13.0	28.0	11.6	29.6	32.7	1
896207 - 1	KIMMES & BAUER, DENNIS	290	19	115	18	35	CCAA	38	451550	1 QWTA	131	800	35.6	14.2	12.6	6.1	12.9	14.8	1
756121 - 1	BAUER, JUANITA	290	19	115	18	35	DABB	38	121812	1 QWTA	200	1,000	56.9	25.3	19.9	15.7	23.7	27.9	1
926066 - 1	MAMER, RUSSELL L	290	19	115	18	36	CAB	38	457205	1	140	800	38.0	20.4	20.7	13.8	17.3	22.3	1
906219 - RW-4	FLINT HILLS RESOURCES LP	271	19	115	19	13	AAD	38	509068	1 QWTA		125	66.0						3
906219 - RW-5	FLINT HILLS RESOURCES LP	271	19	115	19	13	AAD	38	509070	1 QWTA		125	66.0						3
906219 - RW-6	FLINT HILLS RESOURCES LP	271	19	115	19	13	AAD	38	509071	1 QWTA		125	66.0						3
540071 - 3	FLINT HILLS RESOURCES LP	246	19	115	19	13	ACCB	38	208390	1 OPDCCJDN		10,700	2,626.0	317.8	411.9	402.0	364.3	382.5	1
906219 - RW-1	FLINT HILLS RESOURCES LP	271	19	115	19	13	ADA	38	509063	1 QWTA		125	66.0						3
906219 - RW-2	FLINT HILLS RESOURCES LP	271	19	115	19	13	ADA	38	509065	1 QWTA		125	66.0						3
906219 - RW-3	FLINT HILLS RESOURCES LP	271	19	115	19	13	ADA	38	509066	1 QWTA		125	66.0						3
906219 - BMRW	FLINT HILLS RESOURCES LP	271	19	115	19	13	ADD	20	624056	1 OPDC		125	66.0						1
540071 - 5	FLINT HILLS RESOURCES LP	246	19	115	19	13	BDDD	38	208391	1 CFRNCMTS		10,700	2,626.0	484.0	474.1	408.0	444.0	513.7	1
540071 - 1	FLINT HILLS RESOURCES LP	246	19	115	19	13	CBAD	38	208392	1 OPDCCJDN		10,700	2,626.0	517.3	398.8	388.0	259.0	350.2	1
540071 - 2	FLINT HILLS RESOURCES LP	246	19	115	19	13	CBBD	38	208393	1 OPDCCJDN		10,700	2,626.0	412.4	357.9	381.1	383.0	241.0	1
540071 - 6	FLINT HILLS RESOURCES LP	246	19	115	19	13	DBAA	38	208394	1 CMTS		10,700	2,626.0	38.2	18.2				1
540071 - 7	FLINT HILLS RESOURCES LP	246	19	115	19	13	DBDA	38	213584	1 CMTS		10,700	2,626.0	203.2	122.9	130.1	138.1	120.0	1
540071 - 9	FLINT HILLS RESOURCES LP	246	19	115	19	13	DCC	38	524755	1 CJDN		10,700	2,626.0	334.6	311.9	211.9	267.0	169.8	1
026001 - 1	ROSEMOUNT, CITY OF	261	19	115	19	18	DD	38		2 MARCOTTE POND		6,735	320.0	0	6.0	11.3	5.1	2.0	1
540071 - 8	FLINT HILLS RESOURCES LP	246	19	115	19	24	AABD	38	161421	1 CMTS		10,700	2,626.0	299.8	509.5	435.8	556.7	606.0	1
976141 - 1	U OF MN	213	19	115	19	26	BB	38	207611	1 OPDCCJDN		4,000	16.0	0.3	0.0	1.9	2.0	0.0	1
766069 - RR1	ROSEMOUNT, CITY OF	211	19	115	19	27	ADCC	38	457167	1 CJDN		5,200	5 788.0	0	9.2	12.6	22.9	22.3	1
766069 - RR2	ROSEMOUNT, CITY OF	211	19	115	19	27	ADCC	38	474335	1 CJDN		5,200	5 788.0	12.3	8.1	35.9	23.9	20.7	1
766069 - 3	ROSEMOUNT, CITY OF	211	19	115	19	29	ACC	38	211999	1 CJDN		5,200	788.0	56.6	70.4	72.4	154.0	131.1	1
766069 - 7	ROSEMOUNT, CITY OF	211	19	115	19	29	CCCC	38	112212	1 CJDN		5,200	788.0	108.8	125.9	88.9	112.5	131.6	1
~~766069 - 6~~	~~ROSEMOUNT, CITY OF~~	~~211~~	~~19~~	~~115~~	~~19~~	~~30~~	~~CAC~~	~~38~~	~~212278~~	~~1 CJDN~~ ABAND		~~5,200~~	~~788.0~~	0					~~3~~
766069 - 9	ROSEMOUNT, CITY OF	211	19	115	19	31	ACB	38	554248	1 CJDN		5,200	788.0	229.0	230.1	244.0	257.9	254.7	1
~~766069 - 8~~	~~ROSEMOUNT, CITY OF~~	~~211~~	~~19~~	~~115~~	~~19~~	~~31~~	~~CAAD~~	~~38~~	~~509060~~	~~1 CJDN~~		~~5,200~~	~~788.0~~	~~129.5~~	~~143.6~~	~~140.4~~	~~193.1~~	~~172.2~~	~~1~~
756023 - 1	SEMSTREAM LP	215	19	115	19	32	CDCC	38	232246	1 OPDC		1,000	1.0	0.0	573.3	605.5	769.4	734.6	1
776523 - 3	U OF MN	290	19	115	19	33	ABBB	38	207616	1 CJDN	113	225	4.2	0.8	0.8	0.8	0.9	0.8	1
776523 - 2	U OF MN	290	19	115	19	33	DAC	38	207608	1 CJDN	113	225	4.2	1.6	0.1	0.1	2.2	0.7	3
976141 - 2	U OF MN	213	19	115	19	35	BADB	38	207618	1 OPDCCSTL		4,000	16.0	36.4	41.9	30.2	33.1	43.3	1
745120 - 1	APPLE VALLEY, CITY OF	281	19	115	20	13	ADAC	33	207288	1 OSTP	115	350	31.2	40.7	30.1	24.9	33.3	19.7	1
745229 - 3	APPLE VALLEY, CITY OF	211	19	115	20	16	DBCC	33	205812	1 CJDN		17,515	2,000.0	0.0	11.4	0.0	0.0	0.6	1
745014 - 13	BURNSVILLE, CITY OF	211	19	115	20	18	CDDD	33	112235	1 CJDN		17,860	3,200.0	136.3	171.5	106.2	260.9	249.2	1
745229 - 9	APPLE VALLEY, CITY OF	211	19	115	20	22	DDCC	38	151561	1 CJDN		17,515	2,000.0	193.9	224.3	130.8	155.5	237.5	1
745229 - 11	APPLE VALLEY, CITY OF	211	19	115	20	23	DCBB	38	191943	1 CJDN		17,515	2,000.0	415.6	473.3	436.9	468.6	531.8	1
745229 - 10	APPLE VALLEY, CITY OF	211	19	115	20	26	ABAB	38	151563	1 CJDN		17,515	2,000.0	387.6	124.8	99.9	304.6	31.6	1
745229 - 14	APPLE VALLEY, CITY OF	211	19	115	20	26	ABBA	38	509056	1 CMTS		17,515	2,000.0	4.4	4.8				1
745229 - 12	APPLE VALLEY, CITY OF	211	19	115	20	26	ACBB	38	449257	1 CJDN		17,515	2,000.0	55.4	279.9	126.5	157.1	50.7	1
745229 - 13	APPLE VALLEY, CITY OF	211	19	115	20	26	ADBA	38	433284	1 CJDN		17,515	2,000.0	95.7	273.5	134.7	152.1	246.5	1

2481 2142 2344 1944 2439 1857

Dakota County

Permit #	Inst	Permittee	Use	CO	Twp	Rng	Sec	QQQQ	Water shed	Well Unique	Resource Code/Name	Acres	Permitted GPM	Permitted MG/Y	2000	2001	2002	2003	2004	Stat
745229	8	APPLE VALLEY, CITY OF	211	19	115	20	26	BABB	38	127297	1 CJDN		17,515	2,000.0	78.3	102.0	131.5	301.6	67.5	1
745229	15	APPLE VALLEY, CITY OF	211	19	115	20	26	BBBA	38	519955	1 CMTS		17,515	2,000.0	6.8					1
745229	4	APPLE VALLEY, CITY OF	211	19	115	20	26	BBBA	38	205820	1 CJDN		17,515	2,000.0	74.0	94.2	273.8	118.4	73.7	1
745229	5	APPLE VALLEY, CITY OF	211	19	115	20	26	BBBC	38	207677	1 CJDN		17,515	2,000.0	92.6	94.3	49.8	64.8	39.8	1
745229	6	APPLE VALLEY, CITY OF	211	19	115	20	26	BBCB	38	127263	1 OPDCCJDN		17,515	2,000.0	420.6	450.9	439.2	460.6	405.3	1
956229	1	HANSON PIPE & PRODUCTS MN INC	248	19	115	20	26	CDAC	38	207675	1 CJDN		400	33.0	33.7	43.3	31.8	35.3	28.5	1
745229	7	APPLE VALLEY, CITY OF	211	19	115	20	27	ADDD	38	127277	1 CJDN		17,515	2,000.0	276.7	172.6	96.2	121.7	142.9	1
745229	1	APPLE VALLEY, CITY OF	211	19	115	20	28	CCBB	38	205824	1 CJDN		17,515	2,000.0	0.0	7.9	0.2	3.5	1.4	1
745229	2	APPLE VALLEY, CITY OF	211	19	115	20	29	DCDA	38	205825	1 CJDN		17,515	2,000.0	0.0	16.5		1.9	3.8	1
956151	1	FISCHER SAND & AGGREGATE	244	19	115	20	35	BD	38	497931	1 QWTA		4,500	375.0	62.4	52.7	52.8	55.4	59.4	1
956151	2	FISCHER SAND & AGGREGATE	244	19	115	20	35	BD	38	497932	1 QWTA		4,500	375.0						1
956151	3	FISCHER SAND & AGGREGATE	244	19	115	20	35	BD	38	497933	1 QWTA		4,500	375.0						1
043120	1	COBBLESTONE LAKE WATERWORKS LLC	283	19	115	20	36	DBC	38		5 COBBLESTONE LAKE	65	1,000	50.0					0.2	1
026008	1	APPLE VALLEY, CITY OF	261	19	115	20	36	DDD	38		2 COBBLESTONE LAKE		11,700	450.0					0.1	1E
846059	1	ROSEMOUNT AEROSPACE INC	283	19	115	21	26	BAC	33	194950	1 OPDC	13	210	12.0	2.3	3.1	3.8	5.0	7.4	1

30,000
30,481

PINGP-328 TtNUS 20066

Chapter 2

Prairie Island Water Calculation Information

PINGP Water Use Table 2000 through 2005									
	Administration Not Permitted Well [b] *	Well Installation 121 [a] (Gallons) (1)	Well Installation 122[a] (Gallons) (2)	Steam Power [a] CT Well (Gallons) 78-5153	Screen house Well [a] (Gallons) 86-5114	Training center 96-5042 [a] (Gallons)		Total Annual Gallons/gpm	River water [a] (Gallons)
						Domestic	Irrigation		
2005	563,100	20,833,300	19,933,600	6,830,210	12,055,695	1,128,000	818,200	61,599,005/**117** gpm	207,650,000,000
2004		18,576,900	13,336,200	5,280,430	15,517,800	846,800	978,100	54,536,230/**104 gpm**	184,630,000,000
2003		10,648,800	14,248,900	4,163,190	10,969,500	647,000	1,237,000	41,914,390/**80 gpm**	192,790,000,000
2002		18,958,300	11,609,300	3,550,800	4,280,700	1,674,100	--	40,073,200/**76 gpm**	200,408,000,000
2001		16,974,300	16,372,060	3,663,190	7,267,700	2,971,700	--	47,248,950/**90 gpm**	205,615,000,000
2000		13,676,800	12,812,800	3,745,780	7,474,900	2,242,900	--	39,953,180/**76 gpm**	211,164,000,000
Total	563,100	99,668,400	88,312,860	27,233,600	57,566,295	9,510,500	3,033,300	285,324,955	1,202,257,000,000
Ave/yr		16,611,400	14,718,810	4,538,933	9,594,383	1,585,083	505,550	47,554,159/**91 gpm**	200,376,166,667
gpm	**1.07**	**32 gpm**	**28 gpm**	**9 gpm**	**18 gpm**	**3 gpm**	**1 gpm**	**91 gpm**	**381,233 gpm**

References:

a. NSP 2001, NSP 2002, NSP 2003, NSP 2004, NSP 2005, NSP 2006

b. Bergland 2006

* Not included in Total Annual column due to lack of data.

Another well (Permit #89-5048 MN well number 463332) not permitted now because use is below 10,000 gpd. If assumed water withdrawal for 2005 is average for years we don't have data, then 1 gpm will be added to water use for this well.

Total groundwater production rate for the 5 permitted wells is 32 + 28 + 9 + 18 + 3 + 1 = **91 gpm**

Adding the 1 gpm **(Bergland 2006)**or the now not permitted well, the total site use is **92 gpm.**
But we will use 117 + 1 =118 gpm for model. This represents the highest annual pumping rate for the period monitored.

Groundwater characteristics from Section 2.3 of ER for Unconfined Aquifer

- Transmissibility of 500,000 gallons per day per foot (66,845 sq ft/day) **(NSP 2005, USAR Appendix E**
- Coefficient of (intrinsic) permeability of 1,000 to 4,000 gallons per day per square foot **(NSP 2005, USAR Appendix E** Will use 1,000 gpd/sqft to add conservancy to calulations.
- Storage coefficient of 0.20. **(NSP 2005, USAR Appendix E)**
- Vertical permeability is about 30 percent of horizontal permeability. **(NSP 2005, USAR Section 2.4.4)**

Distance Used

Distance to nearest well determined by using Prairie Island site layout map NF-193817 rev B dated 2003 and NSP September 16, 1981 *Temporary Dewatering Application Additional Information* document to locate off-site residence (Lippert) to well # 2 (**2100 ft** to the north to closest residence). This well appears closer to closest off-site residence (north of site) than any residence located closest to site well # 1 (the second highest pumped well. Site wells 1 and 2 are the largest yield wells based on the six-year average. Drawdown calculations are made assuming that well 2 is capable of producing all of the groundwater used by the site.

Depth to Water/Aquifer Thickness

Depth to Water (DTW) varies from approximately 5 to 20 feet across the site. **NSP 2005, USAR Appendix E**
Alluvial thickness at site 158-185 feet. **NSP 2005, USAR Appendix E** Using conservative values, a thickness of 158 feet was used along with a DTW value of 20 feet, the aquifer saturated thickness is 158 ft – 20 ft or **138 feet**.

Well data

The well used for the calculations is **160 ft** deep. Based on the assumptions above the well is considered fully penetrating. (NSP 2001)

Calculations for Equilibrium (Driscol 1989, p.213) well equation were made for the unconfined aquifer (See attached hand written sheet) to estimate drawdown in pumping well to determine if draw small compared to saturated thickness of unconfined aquifer. If so, we can use Theis equation for confined aquifer to approximate distance drawdown values.

Solve:

$$Q = \frac{K(H^2 - h^2)}{1{,}055 \text{ Log } R/r}$$

Where K = 1,000 gpd/sq ft
H = 138 ft
Q = 118 gpm
R = 2100 ft (distance to residence)
r = 0.5 ft (radius of well)
h = height from bottom of unconfined aquifer to drawdown in well.
1,055 = conversion factor
Solve for h

Then H – h = drawdown in well. h = 136 ft Then H – h =2 ft **(SEE ATTACHED HAND WRITTEN SHEET)**

Assumptions for use of Confined Aquifer model

The Transmissibility of 500,000 gallons per day per foot (66,845 sq ft/day) **(NSP 2005, USAR Appendix E)**

Storage for the calculations was determined by using Representative values from Table C.5 (Walton 1987). The table gives Artesian Storativity for Clays, Sand and gravel, and rock (fissures) these value (shown below) were used in conjunction with the estimated aquifer thickness to calculate storage for the confined aquifer.

Material	Artesian Storativity (These values assumed for Specific storage value) (dimensionless)
Clay	1×10^{-4}
Sand and Gravel	1 x 10 -5
Rock, fissured	1×10^{-6}

Ref: Walton 1987

S=b x Ss
Storage = b (aquifer thickness) X Specific storage.
Storage for clay = 138 ft.X 1×10^{-4} = 0.0138
Storage for sand and gravel = 138 ft. X 1×10^{-5} -0.00138
Storage for rock, fissures = 138 ft. X 1×10^{-6} = 0.000138 **This storativity value was used in the calculation because it would produce the greatest radius of influence. (Please refer to Time vs Drawdown spread sheets 1 through Sheet 3 for trial run verifications).**

The values for storage, the distance to closest offsite residence, the transmissivity value 66,845 sq ft/day were used in and excel spread sheet to calculate the drawdown at a distance of 2100 feet from pumping well using the Theis (1935) Non-equilibrium Well Equations See attached (Driscol 1989).

This will result in a very conservative drawdown value. The pumping would occur at a higher rate than the steady state pumping rate used in the calculations but would be pumped for shorter duration. This scenario assumed no recharge to the groundwater system, a consistent aquifer thickness, a constant pumping rate, and homogeneous aquifer material. The calculations as noted do not consider recharge to the aquifer. With the aquifer being made up of Mississippi River alluvium system, the hydraulic connection to the river would supply a steady source of recharge and therefore limit the drawdown radius. Extensive drawdown would not have sufficient time to develop due to continued recharge from the surrounding alluvial aquifer and the recharge from the Mississippi River and other bodies of water (lakes, sloughs, rivers) adjacent to the site.

Surface water Use for PINGP

PINGP Blow Rate Discharge to Mississippi River (cfs) [a] 2000 - 2005						
Month	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**
January	950	562	960	672	804	707
February	951	392	460	633	749	621
March	969	727	857	722	759	767
April	251	732	582	525	521	605
May	284	279	304	283	285	265
June	589	607	591	566	533	591
July	1,149	1,234	1,230	1,143	1,156	1,186
August	1,171	996	1,190	1,185	1,180	1,191
September	1,151	1,158	1,169	857	801	1,172
October	1,153	1,263	1,060	1,001	577	1,150
November	999	1,201	662	898	713	1,016
December	594	1,045	615	817	749	821
Total	10,211	10,196	9,680	9,302	8,827	10,092
Annual Ave.	**851**	**850**	**807**	**775**	**736**	**841**

a. **Reference:** NSP 2001, NSP 2002, NSP 2003, NSP 2004, NSP 2005, NSP 2006

Year	Annual River Water Use (gallons) [a]	Average Annual Blowdown Discharge (cfs) [b]
2000	211,164,000,000	851
2001	205,615,000,000	850
2002	200,408,000,000	807
2003	192,790,000,000	775
2004	184,630,000,000	736
2005	207,650,000,000	841
Total Use (2000 - 2005)	1,202,257,000,000	4,860
Average annual (2000 – 2005) gallons per year (gpYr)	200,376,166,667	Ave. Annual 810 cfs

b. References: NSP 2001, NSP 2002, NSP 2003, NSP 2004, NSP 2005, NSP 2006

c. NSP 2001, NSP 2002, NSP 2003, NSP 2004, NSP 2005, NSP 2006

N/A = not available

200,376,166,667 gpYr (1 cf/7.48 g)(1Yr/365 d)(1d/24 hr)(1 hr/60 min)(1 min/60 sec) = 849.4 cf/sec

849 cfs (7.48 gallons/1cf)(60 s/min) = 381,031 gpm

Mississippi Flow at Prescott 18,380 cfs (USGS 2006)

Percent water use of river flow: 849 cfs/18,380 cfs (100) = 4.6 %

River water consumptive use = 849 cfs – 810 cfs = 39 cfs

References:

Bergland (Britta A. Bergland) 2006, Additional Water Data for 2005 for Unpermitted Well, E-mail from Briita Bergland (NMC) to Emily McRee (TtNUS), August 24, 2006.

NSP (Northern States Power Company) 2001, *2000 DNR Annual Report of water Use*, January 30.

NSP (Northern States Power Company) 2002, *2001 DNR Annual Report of water Use*, January 28.

NSP (Northern States Power Company) 2003, *2002 DNR Annual Report of water Use*, January 28.

NSP (Northern States Power Company) 2004, *2003 DNR Annual Report of Water Use*, January 16.

NSP (Northern States Power Company) 2005, *2004 DNR Annual Report of Water Use*, January 31.

NSP (Northern States Power Company) 2006 *2005 DNR Annual Report of Water Use*, February 15.

NSP 2005, Prairie Island Nuclear Generating Plant Updated Safety Analysis Report, Rev. 28, December 10.

Walton (William C.) 1987, Groundwater Pumping Tests Design & Analysis, Lewis Publishers Michigan.

Driscol (Fletcher G.) 1989, Groundwater and Wells, Second Edition, Johnson Filtration Systems Inc., Minnesota.

NSP (Northern States Power Company) 1981, Temporary Dewatering Application Additional Information, September 16.

Prairie Island Site Layout Map NF-193817 rev B dated 2003

USGS (U.S. Geological Survey) 2006, *Water Reources Data, Minnesota, Water Year 2005*, Water Data Report MN-05-01, April 5.

NSP (Northern States Power Company) 2001, *2000 Annual Report, Prairie Island Nuclear Generating Plant, Environmental Monitoring and Ecological Studies Program*, Northern States Power Company d/b/a Xcel Energy.

NSP (Northern States Power Company 2002, *2001 Annual Report, Prairie Island Nuclear Generating Plant, Environmental Monitoring and Ecological Studies Program*, Northern States Power Company d/b/a Xcel Energy.

NSP (Northern States Power Company 2003, *2002 Annual Report, Prairie Island Nuclear Generating Plant, Environmental Monitoring and Ecological Studies Program*, Northern States Power Company d/b/a Xcel Energy.

NSP (Northern States Power Company) 2004, *2003 Annual Report, Prairie Island Nuclear Generating Plant, Environmental Monitoring and Ecological Studies Program*, Northern States Power Company d/b/a Xcel Energy.

NSP (Northern States Power Company) 2005, *2004 Annual Report, Prairie Island Nuclear Generating Plant, Environmental Monitoring and Ecological Studies Program*, Northern States Power Company d/b/a Xcel Energy.

NSP (Northern States Power Company) 2006, *2005 Annual Report, Prairie Island Nuclear Generating Plant, Environmental Monitoring and Ecological Studies Program*, Northern States Power Company d/b/a Xcel Energy.

Driscoll p. 213

$$Q = \frac{K(H^2 - h^2)}{1055 \log R/r}$$

$$118\,gpm = \frac{1000\,gpd\,(138\,Ft^2 - h^2)}{1055 \log(2100/0.5)}$$

$$118\,gpm = \frac{1000\,gpd\,(19044\,ft^2 - h^2)}{1055 \log 4200}$$

$$118\,gpm = \frac{1000\,gpd\,(19044\,ft^2 - h^2)}{1055\,(3.6232)}$$

$$\frac{118\,gpm}{1000\,gpd}(3822.528) = 19044\,Ft^2 - h^2$$

$$451\,Ft^2 = 19044\,Ft^2 - h^2$$

$$h^2 = 18593\,ft^2$$

$$h = 136\,Ft$$

$$138 - 136 = 2\,Ft$$

Use Drawdown minimal

Confined Aquifer Scenario

If Drawdown in well minimal compared to Saturated thickness of unconfined aquifer can use Confined Aquifer Scenario to calculate drawdown at distance.

Sheet 1

TIME VS. DRAWDOWN for a CONFINED AQUIFER*

Site: PINGP

Well: 2

Storage 0.000138

Given the Theis (1935) Non-equilibrium Well Equations:

s = [Q / 4(3.14)T](Wu)

Where s = drawdown, ft

Q = pumping rate, ft^3/day

T = transmissivity, ft^2/day

W(u) = Theis well function

Also, from the non-equilibrium well equation:

u = r^2S / 4Tt

Where S = coefficient of storage

t = time since pumping started, days

r = distance to pumping well, ft

CALCULATIONS:

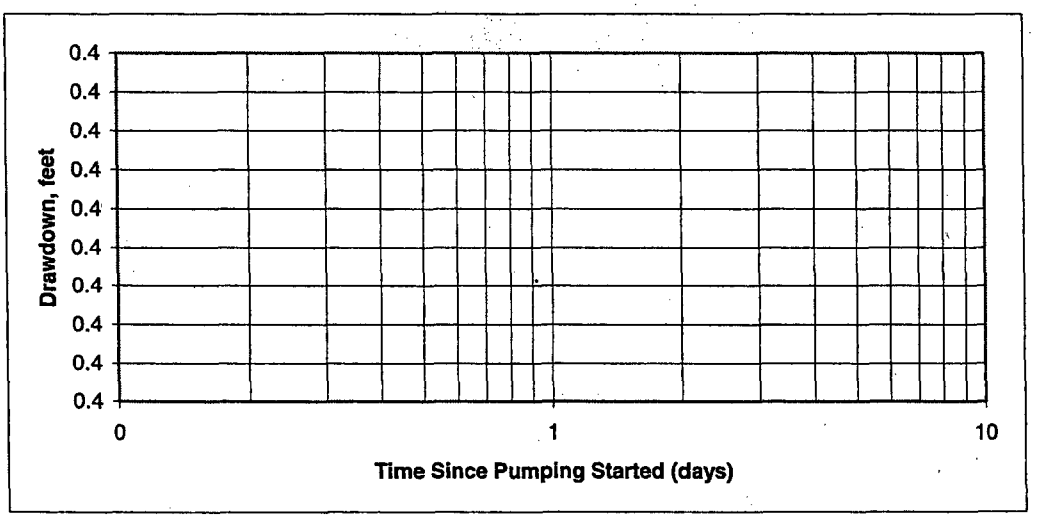
	10YR	20YR	30YR	40Y	60YR	
Case:	1	2	3	4	5	6
r =	2100	2100	2100	2100	2100	400
S =	0.000138	0.000138	0.000138	0.000138	0.000138	0.00019
T =	66,845	66845	66845	66845	66845	13636
t =	3,650	7300	10950	14600	21900	0.5
Then:						
u =	6.236E-07	3.12E-07	2.08E-07	1.56E-07	1.04E-07	0.001115

Lookup:(a)						
Wu =	13.71	14.41	14.8	15.07	15.01	6.24

Given:						
Q, gpm =	118	118	118	118	118	500
Then:						
s =	0.4	0.4	0.4	0.4	0.4	3.5

* May be used for unconfined aquifer where drawdown is small portion of saturated thickness

(a) Table of u vs. Wu may be found in Driscoll, page 921.



Note: Case #6 above should verify 3.5' DD shown by Driscoll, page 220.

Sheet 2

TIME VS. DRAWDOWN for a CONFINED AQUIFER*

Site: PGNGP

Well: #2

Given the Theis (1935) Non-equilibrium Well Equations:

Storage 0.00138

s = [Q / 4(3.14)T](Wu)

Where s = drawdown, ft

Q = pumping rate, ft^3/day

T = transmissivity, ft^2/day

W(u) = Theis well function

Also, from the non-equilibrium well equation:

u = r^2S / 4Tt

Where S = coefficient of storage

t = time since pumping started, days

r = distance to pumping well, ft

CALCULATIONS:

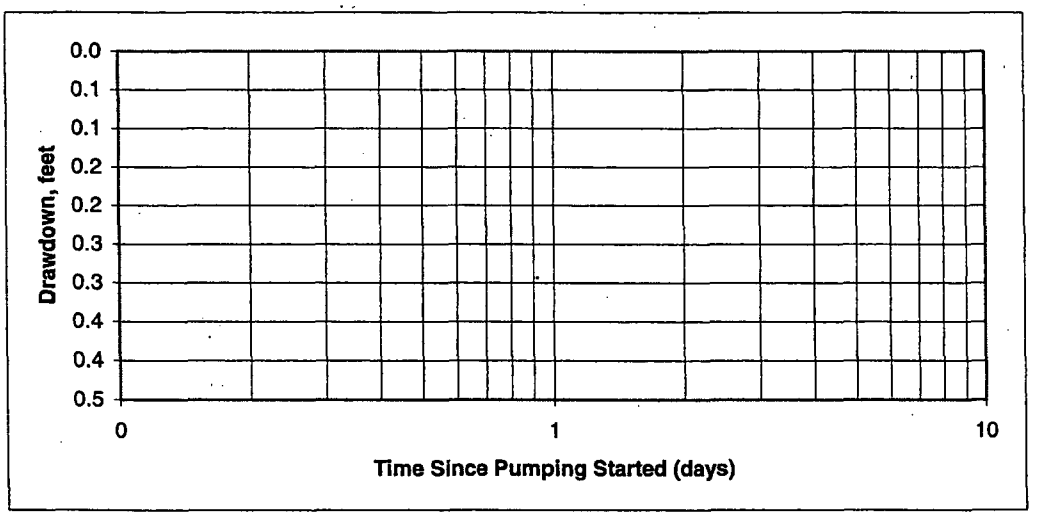
	10YR	20YR	30YR	40YR	60YR	
Case:	1	2	3	4	5	6
r =	2100	2100	2100	2100	2100	400
S =	0.00138	0.00138	0.00138	0.00138	0.00138	0.00019
T =	66,845	66845	66845	66845	66845	13636
t =	3,650	7300	10950	14600	21900	0.5
Then:						
u =	6.236E-06	3.12E-06	2.08E-06	1.56E-06	1.04E-06	0.001115

Lookup:(a)						
Wu =	11.4	14.41	14.8	15.07	15.01	6.24

Given:						
Q, gpm =	118	118	118	118	118	500
Then:						
s =	0.3	0.4	0.4	0.4	0.4	3.5

* May be used for unconfined aquifer where drawdown is small portion of saturated thickness

(a) Table of u vs. Wu may be found in Driscoll, page 921.



Note: Case #6 above should verify 3.5' DD shown by Driscoll, page 220.

Sheet 3

TIME VS. DRAWDOWN for a CONFINED AQUIFER*

Site: PINGP

Well: 2

Given the Theis (1935) Non-equilibrium Well Equations:

Storage 0.0138

s = [Q / 4(3.14)T](Wu)

Where s = drawdown, ft — T = transmissivity, ft^2/day

Q = pumping rate, ft^3/day — W(u) = Theis well function

Also, from the non-equilibrium well equation:

u = r^2S / 4Tt

Where S = coefficient of storage — t = time since pumping started, days

r = distance to pumping well, ft

CALCULATIONS:

10 YR 20YR 30YR 40YR 60YR

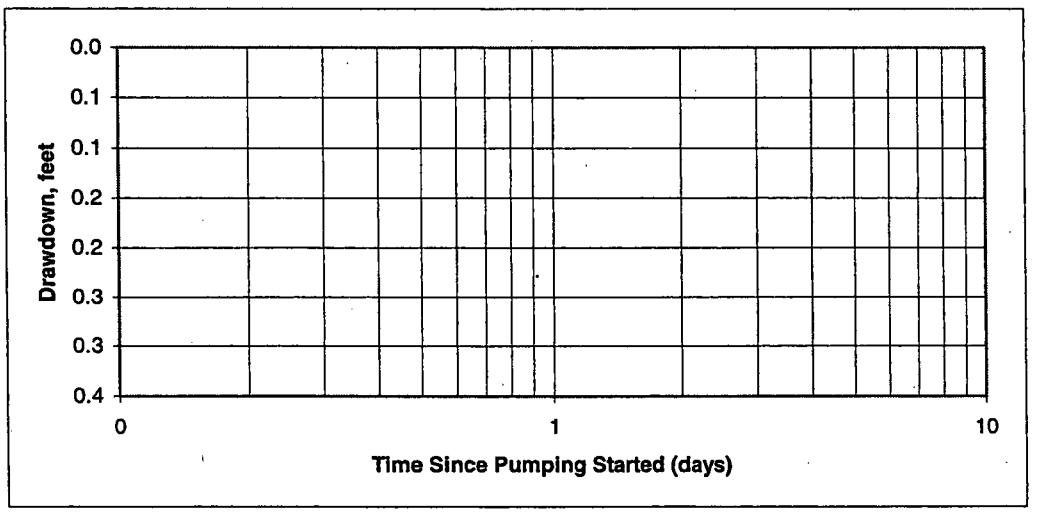
Case:	1	2	3	4	5	6
r =	2100	2100	2100	2100	2100	400
S =	0.0138	0.0138	0.0138	0.0138	0.0138	0.00019
T =	66,845	66845	66845	66845	66845	13636
t =	3,650	7300	10950	14600	21900	0.5
Then:						
u =	6.236E-05	3.12E-05	2.08E-05	1.56E-05	1.04E-05	0.001115

Lookup:(a)						
Wu =	9.1	9.8	10.19	10.47	10.94	6.24

Given:						
Q, gpm =	118	118	118	118	118	500
Then:						
s =	0.2	0.3	0.3	0.3	0.3	3.5

* May be used for unconfined aquifer where drawdown is small portion of saturated thickness

(a) Table of u vs. Wu may be found in Driscoll, page 921.



Note: Case #6 above should verify 3.5' DD shown by Driscoll, page 220.

UNIVERSITY OF MINNESOTA
ST. ANTHONY FALLS HYDRAULIC LABORATORY

Project Report No. 199

MODEL STUDIES OF A COOLING WATER DISCHARGE OUTLET MODIFICATION PRAIRIE ISLAND NUCLEAR GENERATING PLANT

by

J. M. Wetzel

and

W. Q. Dahlin

Prepared for

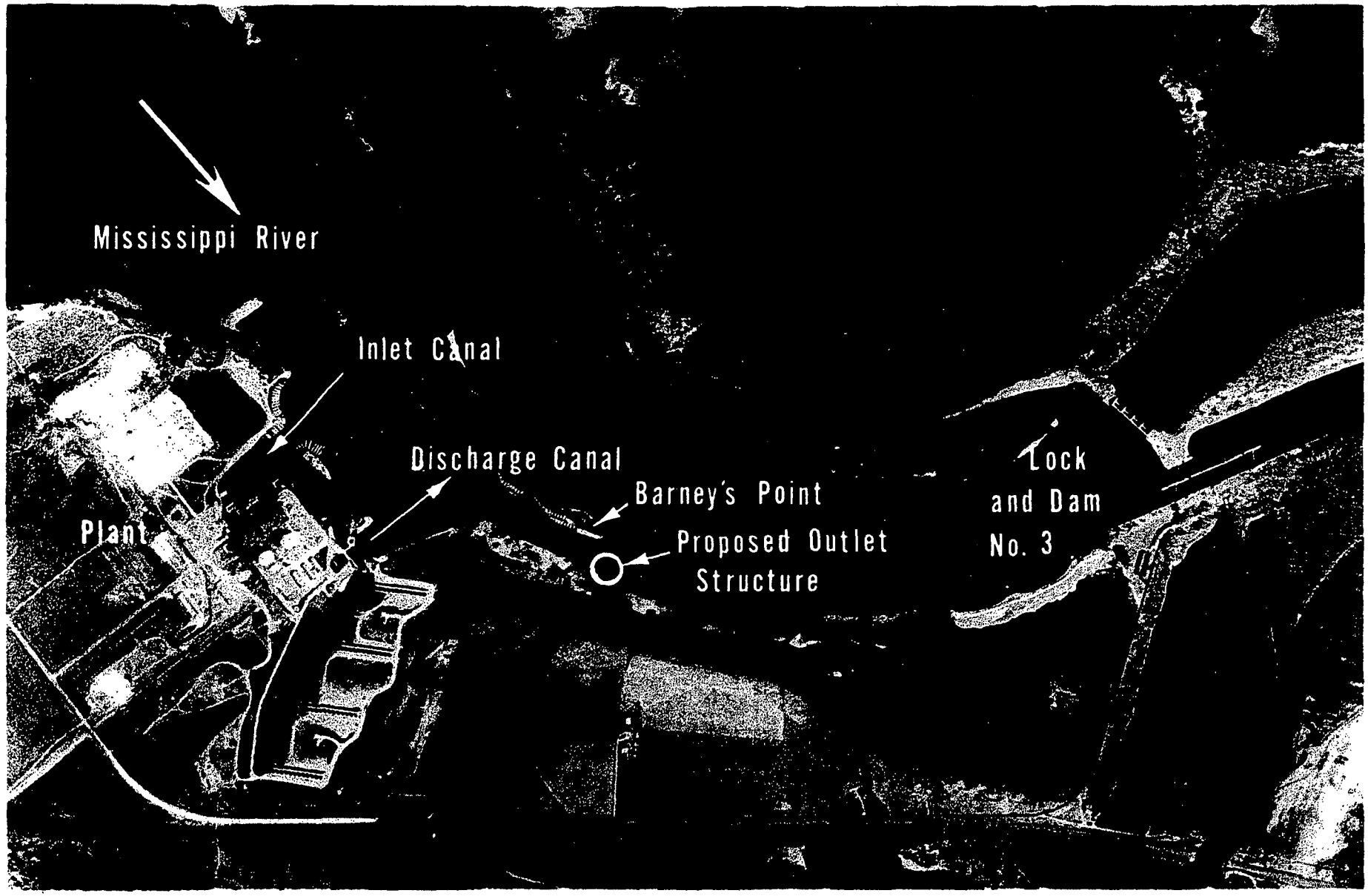
NORTHERN STATES POWER COMPANY

March, 1981

Minneapolis, Minnesota

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, creed, color, sex, national origin, or handicap.

The plant location and layout.


Mississippi River
Inlet Canal
Discharge Canal
Barney's Point
Proposed Outlet
Structure
Plant
Lock
and Dam
No. 3

PREFACE

Hydraulic model studies of a modification of the cooling water discharge outlet of the Prairie Island Nuclear Generating Plant were carried out at the St. Anthony Falls Hydraulic Laboratory. The existing outlet is an open channel which discharges the warmer water into the Mississippi River. The existing outlet is in close proximity to the plant inlet resulting in some recirculation of the warmer water, and fish entering the open-channel outlet are sometimes subjected to thermal shock when the water temperature changes suddenly. To reduce these undesirable effects a discharge outlet modification was proposed which would discharge the warmer water from an impounded area through four discharge pipes into the Mississippi River. The outlet would also be moved further downstream from the plant. The purpose of the model studies was to evaluate the modification which included the determination of the local scour at the pipe outlets and the impact on navigation in the vicinity of the proposed outlet. The studies were conducted on a model constructed to an undistorted scale of 1 to 32. Ten selected flow conditions were investigated on the model. Documentation consisted of recording flow directions, measuring flow velocities, photographing the surface flow patterns, and recording the local scour.

The model studies described in this report were sponsored by Northern States Power Company. The Stone and Webster Engineering Corporation, Denver, Colorado, served as consultants on the project. Liaison between NSP and the laboratory was primarily through Mr. James Poucher and Mr. Richard McGinnis. Dr. Y. Shen and M. John R. Troka of Stone and Webster Engineering Corporation were the principal contacts of the consultant. The above persons viewed the model during construction and operation and provided continuous input during the test program and the evaluation of the test results. The model was also observed during operation by personnel from various regulatory agencies such as the Corps of Engineers, Environmental Protection Agency, Pollution Control Agency, Department of Natural Resources, and the Department of Fish and Wildlife.

The overall apsects of the model studies were under the supervision of Mr. J. M. Wetzel and Dr. S. Dhamotharan of the laboratory staff. Mr. Warren Q. Dahlin was responsible for model construction and data collection; he was assisted by Messrs. Robert Plaska and Ching Keong Teng.

TABLE OF CONTENTS

		Page
	Preface	iv
	List of Figures	vii
	List of Photos	x
I.	INTRODUCTION	1
II.	THE MODEL	2
	A. Model Scale	3
	B. Model Layout	4
	C. Sediment Characteristics	7
	D. Test Conditions and Procedures	8
III.	DISCUSSION OF EXPERIMENTAL RESULTS	11
	A. Original River Bed - Flow Condition 1	11
	B. Discharge Outlet Modification - Bed Material, D_g = 0.55 mm	12
	1. Flow Condition 2	13
	2. Flow Condition 10	13
	C. Discharge Outlet Modification - Bed Material, D_g = 0.096 mm	14
	1. Flow Condition 2	15
	2. Flow Condition 3	15
	3. Flow Condition 4	16
	4. Flow Condition 5	16
	5. Flow Condition 6	17
	6. Flow Condition 7	17
	7. Flow Condition 8	18
	8. Flow Condition 9	18
	9. Flow Condition 10	18
IV.	CONCLUSIONS	20

Figs. 1 through 32
Photos 1 through 38

LIST OF FIGURES

Figure No.	
1	Location of Prairie Island Nuclear Generating Plant.
2	Plant Layout with Proposed Outlet.
3	Model Layout with Original River Contours.
4	Discharge Outlet Modification, Model Layout with Discharge Structure.
5	Discharge Outlet Modification, Model Layout with Discharge Structure.
6	Sediment Sample Locations.
7	Composite Size Distribution of Prototype Samples.
8	Size Distribution of Sands Used in the Model.
9	Flow Conditions Investigated.
10	Operating Schedule for Plant Discharges.
11	Velocity Pattern with Original River Contours, Flow Pattern and Velocities at Mid-Depth. Flow Condition 1; Q_T = 12,000 cfs, Q_D = 0 cfs, T.W. = 673.8 ft.
12	Velocity Pattern with Original River Contours, Flow Pattern and Velocities at the Water Surface. Flow Condition 1; Q_T = 12,000 cfs, Q_D = o cfs, T.W. = 673.8 ft.
13	Discharge Outlet Modification, Flow Pattern and Velocities. Flow Condition 2; Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft.
14	Discharge Outlet Modification, Flow Pattern and Velocities. Flow Condition 10; Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft.
15	Discharge Outlet Modification, Flow Pattern and Velocities. Flow Condition 2; Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft.
16	Discharge Outlet Modification, Flow Pattern and Velocities at the Water Surface. Flow Condition 2; Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft.

Figure No.	
17	Discharge Outlet Modification, Flow Pattern and Velocities. Flow Condition 3; Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft.
18	Discharge Outlet Modification, Flow Pattern and Velocities at the Water Surface. Flow Condition 3; Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft.
19	Discharge Outlet Modification, Flow Pattern and Velocities. Flow Condition 4; Q_T = 3700 cfs, Q_D = 150 cfs, T.W. = 674.4 ft.
20	Discharge Outlet Modification, Flow Pattern and Velocities at the Water Surface. Flow Condition 4; Q_T = 3700 cfs, Q_D = 150 cfs, T.W. = 674.4 ft.
21	Discharge Outlet Modification, Flow Pattern and Velocities. Flow Condition 5; Q_T = 3700 cfs, Q_D = 350 cfs, T.W. = 674.4 ft.
22	Discharge Outlet Modification, Flow Pattern and Velocities at the Water Surface. Flow Condition 5; Q_T = 3700 cfs, Q_T = 350 cfs, T.W. = 674.4 ft.
23	Discharge Outlet Modification, Flow Pattern and Velocities. Flow Condition 6; Q_T = 3700 cfs, Q_D = 700 cfs, T.W. = 674.4 ft.
24	Discharge Outlet Modification, Flow Pattern and Velocities at the Water Surface. Flow Condition 6; Q_T = 3700 cfs, Q_D = 700 cfs, T.W. = 674.4 ft.
25	Discharge Outlet Modification, Flow Pattern and Velocities. Flow Condition 7; Q_T = 5000 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft.
26	Discharge Outlet Modification, Flow Pattern and Velocities at the Water Surface. Flow Condition 7; Q_T = 5000 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft,
27	Discharge Outlet Modification, Flow Pattern and Velocities. Flow Condition 8; Q_T = 6400 cfs, Q_D = 800 cfs, T.W. = 674.3 ft.
28	Discharge Outlet Modification, Flow Pattern and Velocities at the Water Surface. Flow Condition 8; Q_T = 6400 cfs, Q_D = 800 cfs, T.W. = 674.3 ft.
29	Discharge Outlet Modification, Flow Pattern and Velocities. Flow Condition 9; Q_T = 7500 cfs, Q_D = 1390 cfs, T.W. = 674.2 ft.

Figure No.

30 Discharge Outlet Modification, Flow Pattern and Velocities at Water Surface. Flow Condition 9; Q_T = 7500 cfs, Q_D = 1390 cfs, T.W. = 674.2 ft.

31 Discharge Outlet Modification, Flow Pattern and Velocities. Flow Condition 10; Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft.

32 Discharge Outlet Modification, Flow Pattern and Velocities at the Water Surface. Flow Condition 10; Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft.

LIST OF PHOTOS

Photo No.	
Frontispiece	The plant location and layout.
1	Original River Bed. Flow Condition 1, Q_T = 12,000 cfs, Q_D = 0 cfs, T.W. = 673.8 ft; flow pattern.
2	Original River Bed. Flow Condition 1, Q_T = 12,000 cfs, Q_D = 0 cfs, T.W. = 673.8 ft; flow pattern.
3	Discharge Outlet Modification. Model layout with original contours.
4	Discharge Outlet Modification. Model layout with original contours.
5	Discharge Outlet Modification. Model layout with original contours.
6	Discharge Outlet Modification. Flow Condition 1, Q_T = 12,000 cfs, Q_D = 0 cfs, T.W. = 673.8 ft; flow pattern.
7	Discharge Outlet Modification. Flow Condition 2, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8,7,6 and 5; flow pattern.
8	Discharge Outlet Modification. Flow Condition 2, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8,7,6 and 5; flow pattern.
9	Discharge Outlet Modification. Flow Condition 2, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8,7,6 and 5; local scour after 8 hours of flow.
10	Discharge Outlet Modification. Flow Condition 2, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8,7,6 and 5; local scour after 8 hours of flow.
11	Discharge Outlet Modification. Flow Condition 3, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8,7,6 and 5; flow pattern.
12	Discharge Outlet Modification. Flow Condition 3, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8,7,6 and 5; flow pattern.

Photo No.

13	Discharge Outlet Modification. Flow Condition 3, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8,7,6 and 5; local scour after 8 hours of flow.
14	Discharge Outlet Modification. Flow Condition 3, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8,7,6 and 5; local scour after 8 hours of flow.
15	Discharge Outlet Modification. Flow Condition 4, Q_T = 3700 cfs, Q_D = 150 cfs, T.W. = 674.4 ft, Pipe Open = 5; flow pattern.
16	Discharge Outlet Modification. Flow Condition 4, Q_T = 3700 cfs, Q_D = 150 cfs, T.W. = 674.4 ft, Pipe Open = 5; flow pattern.
17	Discharge Outlet Modification. Flow Condition 4, Q_T = 3700 cfs, Q_D = 150 cfs, T.W. = 674.4 ft, Pipe Open = 5; local scour after 8 hours of flow.
18	Discharge Outlet Modification. Flow Condition 5, Q_T = 3700 cfs, Q_D = 350 cfs, T.W. = 674.4 ft, Pipe Open = 7; flow pattern.
19	Discharge Outlet Modification. Flow Condition 5, Q_T = 3700 cfs, Q_D = 350 cfs, T.W. = 674.4 ft, Pipe Open = 7; flow pattern.
20	Discharge Outlet Modification. Flow Condition 5, Q_T = 3700 cfs, Q_D = 350 cfs, T.W. = 674.4 ft, Pipe Open = 7; local scour after 8 hours of flow.
21	Discharge Outlet Modification. Flow Condition 6, Q_T = 3700 cfs, Q_D = 700 cfs, T.W. = 674.4 ft, Pipes Open = 8 and 5; flow pattern.
22	Discharge Outlet Modification. Flow Condition 6, Q_T = 3700 cfs, Q_D = 700 cfs, T.W. = 674.4 ft, Pipes Open = 8 and 5; flow pattern.
23	Discharge Outlet Modification. Flow Condition 6, Q_T = 3700 cfs, Q_D = 700 cfs, T.W. = 674.4 ft, Pipes Open = 8 and 5; local scour after 8 hours of flow.
24	Discharge Outlet Modification. Flow Condition 7, Q_T = 5000 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8,7,6 and 5; flow pattern.
25	Discharge Outlet Modification. Flow Condition 7, Q_T = 5000 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8,7,6 and 5; flow pattern.

Photo No.	
26	Discharge Outlet Modification. Flow Condition 7, Q_T = 5000 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8,7,6 and 5; local scour after 8 hours of flow.
27	Discharge Outlet Modification. Flow Condition 8, Q_T = 6400 cfs, Q_D = 800 cfs, T.W. = 674.3 ft, Pipes Open = 8 and 7; flow pattern.
28	Discharge Outlet Modification. Flow Condition 8, Q_T = 6400 cfs, Q_D = 800 cfs, T.W. = 674.3 ft, Pipes Open = 8 and 7; flow pattern.
29	Discharge Outlet Modification. Flow Condition 8, Q_T = 6400 cfs, Q_D = 800 cfs, T.W. = 674.3 ft, Pipes Open = 8 and 7; local scour after 8 hours of flow.
30	Discharge Outlet Modification. Flow Condition 9, Q_T = 7500 cfs, Q_D = 1390 cfs, T.W. = 674.2 ft, Pipes Open = 8,7,6 and 5; flow pattern.
31	Discharge Outlet Modification. Flow Condition 9, Q_T = 7500 cfs, Q_D = 1390 cfs, T.W. = 674.2 ft, Pipes Open = 8,7,6 and 5; flow pattern.
32	Discharge Outlet Modification. Flow Condition 9, Q_T = 7500 cfs, Q_D = 1390 cfs, T.W. = 674.2 ft, Pipes Open = 8,7,6 and 5; local scour after 8 hours of flow.
33	Discharge Outlet Modification. Flow Condition 10, Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft, Pipes Open = 8,7,6 and 5; flow pattern.
34	Discharge Outlet Modification. Flow Condition 10, Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft, Pipes Open = 8,7,6 and 5; flow pattern.
35	Discharge Outlet Modification. Flow Condition 10, Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft, Pipes Open = 8,7,6 and 5; flow pattern.
36	Discharge Outlet Modification. Flow Condition 10, Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft, Pipes Open = 8,7,6 and 5; local scour after 8 hours of flow.
37	Discharge Outlet Modification. Flow Condition 10, Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft, Pipes Open = 8,7,6 and 5; local scour after 8 hours of flow.

Photo No.	
38	Discharge Outlet Modification. Flow Condition 10, Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft, Pipes Open = 8,7,6 and 5; local scour after 8 hours of flow.

MODEL STUDIES OF A COOLING WATER DISCHARGE OUTLET MODIFICATION - PRAIRIE ISLAND NUCLEAR GENERATING PLANT

I. INTRODUCTION

The Prairie Island Nuclear Generating Plant is located on the Mississippi River near Red Wing, Minnesota. The general location is shown in Fig. 1. The plant is situated on the right bank in the bend of the river about one mile above Lock and Dam No. 3 as shown in the frontispiece. The cooling water is presently discharged through an open canal directly into the Mississippi River. The present outlet is in rather close proximity to the plant inlet resulting in some recirculation of the warmer water. Northern States Power (NSP) also has need for preventing fish from entering the outlet canal where they would be subject to cold shock mortality in case of sudden winter shutdown. Modification of the discharge outlet has therefore been proposed. The discharge outlet would be moved further downstream and the cooling water discharged into the river 500 ft downstream of Barney's Point, thus reducing recirculation. This may be seen in the frontispiece and the sketch in Fig. 2. Dikes built across a backwater area adjacent to the plant would provide an impoundment area for the plant discharge. Four pipes with diameters of 8, 7, 6, and 5 ft would convey the flow through the embankment and discharge it into the river. The velocity of the flow from the open pipes would be maintained above 8 fps. This high velocity would prevent most of the fish from swimming through the pipes and entering the impoundment pool. During operation, the pipes would be either closed or wide open, and the number of open pipes would vary from 1 to 4 depending on the plant discharge. By proper selection of the pipes to be opened, the head can be maintained at a fairly constant elevation, thus keeping the discharge velocity greater than the required 8 fps.

To provide for better mixing of the warmer water with the river water and to minimize local scour at the pipe outlets, an area would be dredged down to elevation 652 ft and the slopes adjacent to the pipe outlets would be protected with 12 in. riprap as shown in Fig. 2. The mixing of the warm water was judged not to be a problem and thus was not considered in the model studies. With jet velocities over 8 fps, local scour in the discharge area was of particular concern.

Another area of interest was the impact on navigation in the vicinity of the proposed outlet. With Lock and Dam No. 3 located at the right bank about 1 mile downstream from the plant, barges and pleasure crafts tend to hug the right bank and pass close to the outlet. To investigate the effect of the river traffic, detailed flow direction and velocity studies were conducted.

To give some insight as to the effect of the proposed outlet modification on local scour and impact on navigation, it was judged necessary to conduct hydraulic model studies. A model was constructed to a scale of 1 to 32 and tested at the laboratory for the specific purpose of evaluating the proposed design. Details of the model construction, testing program, and presentation of the experimental results are discussed in this report.

II. THE MODEL

A. Model Scale

The interaction of the flow jets emerging from the various pipes with the river flow is a three-dimensional phenomenon and is one of the important factors influencing the local scour and effects on local river traffic. To reduce scale effects and produce higher flow velocities which would give more quantitative results, it was desirable to construct a model as large as possible. On the other hand, the model should be economical, practical to operate, and fit into model areas available at the laboratory. After some deliberation, an undistorted geometric scale of 1 to 32 was selected. The undistorted scale was chosen to alleviate scaling problems associated with distorted models in regard to local scour phenomena. The model included reasonable reaches of the river, both upstream and downstream from the outlet, and most of the cross section of the river. The model was operated in accordance with the Froude law of similitude. The following expressions were used to convert dimensions and hydraulic quantities from model to prototype or vice versa. The subscripts m and p refer to model and prototype, repectively, and the subscript r denotes the ratio of model to prototype.

Quantity	Ratio	Scale Relation
Length, L	$L_r = L_m/L_p$	1:32
Velocity, V	$V_r = L_r^{1/2}$	1:5.66
Time, T	$T_r = L_r^{1/2}$	1:5.66
Discharge, Q	$Q_r = L_r^{5/2}$	1:5793

For example, if the velocity in the model is 1.0 ft/sec, the corresponding velocity in the prototype will be 5.66 ft/sec.

B. Model Layout

The generating plant is located on the right bank and outside of a bend in the Mississippi River about 1 mile upstream of Lock and Dam No. 3 as shown in the frontispiece. The thalweg, or line of greatest depth, occurs at the outside of the bend in the vicinity of the plant outlet. Several islands are scattered throughout this reach of the river with a prominent long, narrow island just streamward of the present outlet. The lower end of this island is called Barney's Point.

In designing the model layout it was first necessary to determine the river area to be included and the alignment of the river in the available model basin. Objectives considered in this selection were to:

1. Include as much of the cross-sectional area of the river as possible,

2. Include a sufficient portion of Barney's Point in order to model the flow around the island, and

3. Provide proper alignment so that approach and discharge flow angles properly simulated the prototype flow conditions.

Two orientations of the river bed with respect to the basin walls were considered: one with the basin wall approximately parallel to the river bank downstream of the discharge point, and the other with the basin wall arranged such that the river area included in the model was maximized.

The first orientation resulted in a very small section of the main river channel at Barney's Point being included in the model. It was felt the flow distribution caused by this orientation would not represent the actual case in the river, and therefore this orientation was rejected.

The second orientation was chosen for use. The arrangement of the basin with respect to the river was selected to cover the discharge from the backwater area at Barney's Point and to include the entire width of the shipping channel. It was also decided that the model should be constructed such that a constant percentage of the river flow be modeled downstream of the region of the proposed outlet. This was accomplished by installing a false wall in the basin on the side opposite the plant discharge.

To determine the area included in the model, cross sections were drawn at several range lines identified from bathometric data provided by NSP. Each cross section was subdivided,and the area for each subsection was determined by planimetry. Average velocities for each subsection were taken from the U. S. Army Corps of Engineers model studies for reference conditions with a discharge of 18,079 cfs and a tailwater elevation of 674.1 ft. Computation of flows past each section using average depths and velocities verified that the information used was acceptable, that is, flows at each section were approximately equal.

To determine the percentage of river flow to be modeled, the cross-sectional area included within the basin for the range located furthest upstream was calculated. The flow passing through the section was then determined using the sum of the average depth times the average velocity for each subsection, or portion of a subsection, included within the basin. The percentage of the total river flow was then determined and this percentage was held constant for the remaining downstream sections.

To determine the location of the wall for the downstream sections, it was first determined within which subsection the wall must be located in order to keep the modeled river flow constant. This was done by summing the average flow for each subsection until the sum exceeded the modeled flow. The location of the wall, within the subsection containing it, was determined by taking the flow required to pass the subsection (total modeled flow minus the sum of the flows for subsections fully included) and dividing it by the average depth and velocity. This provided an approximate width of the subsection to be included. Using this width, an average flow was calculated and compared to the required flow. Based on this comparison, the required width for the subsection was adjusted until the average flow passing the subsection equalled the required flow. The location of the wall from the river bank was the sum of the widths of the individual subsections needed to obtain the required flow percentages.

With this procedure, the river flow measured at the downstream end of the model was 84 per cent of the total river flow. This percentage was based on the reference flow and tailwater elevation previously stated. For flow conditions other than the reference flow, it was assumed that the percentage of the river flow would remain constant. Based on the above

considerations, the model layout and alignment that evolved is presented on Fig. 3. About 1350 ft of the river length and 750 ft of the river width was modeled. The layout shows Barney's Point at the upstream end of the model, the guide wall along the left side of the model, and the location of the navigation channel through the model area.

To provide proper flow distribution around Barney's Point, two river inflow systems were installed in the model. The main river channel discharge (Q_{25}) to the left of Barney's Point was conveyed from the laboratory water supply system through a 12 in. diameter supply line to the model area. The supply line included a calibrated 4.5 in. diameter orifice meter to measure the flow rates and a control valve for flow adjustments. That portion of the river flow to the right of Barney's Point (Q_{42}) was conveyed to the model area through a 4 in. diameter supply line with a calibrated 1.625 in. diameter orifice meter and a control valve, or for lower flows, through a 2 in. diameter bypass with a calibrated 0.875 in. diameter orifice meter and control valve. For some operating conditions, it was necessary to withdraw rather than introduce flow in this area. Withdrawal was accomplished by installing a branch line downstream of the main control valve with a vertical leg extending to a lower level and terminated with a valve. By closing the main valve and opening the lower valve, the line operated as a siphon. The flow withdrawn from the model was measured with an orifice installed in the vertical leg. Both inflow systems were provided with manifolds, each with provisions to adjust the inflow for proper distribution. Wire mesh baffles were placed downstream of the manifolds to reduce turbulence and calm the water before it entered the model proper. An adjustable weir was installed at the downstream end of the model to control the tailwater elevation. To provide for the plant discharge in the model, four plastic tubes with inside diameters of 3, 2.625, 2.25, and 1.875 inches were used to represent the 8, 7, 6, and 5 ft diameter prototype pipes, respectively. The pipes were placed at the location and angle as shown in Figs. 4 and 5. The inverts of all the pipes were set to elevation 659.83 ft. Each pipe was provided with a calibrated orifice meter to measure the flow, a control valve for flow adjustments, and was connected to the laboratory water supply system.

The bed of the entire model area was erodible, using a fine sand molded to conform to topographic maps and river soundings provided by NSP. To

assist in the molding procedure, sheet metal templates were positioned across the model at 5 ft intervals, and supported over the model bed. These templates were accurately cut to conform to the original river contours at their respective locations. The sand was graded to the underside of the templates and the templates were then removed. In between test runs, the templates were replaced and the model remolded so that each test started with an identical bed configuration. For the first test the model was molded to the original river contours as shown in Fig. 3. This first test was made to verify the model and to provide reference data for later comparisons.

After the initial test, the discharge outlet modification was molded into the model as shown on Figs. 4 and 5. The four pipes discharge into an area excavated to elevation 652 ft with side slopes from that elevation up to the original ground surface. The 4:1 slope at the pipe exits and a part of the basin bottom at elevation 652 ft was protected with a 24 in. thick layer of rock with a D_g of 12 in., where D_g is the median diameter of the material. The pipes discharge in a submerged condition with a minimum tailwater operating level of 673.5 ft as indicated in Fig. 5. Special templates were made to conform to the outlet area modifications and used to mold that area. The outlet area was also remolded after each test run.

C. Sediment Characteristics

It was desired to model the sediment size of the river bed as close as possible so that the local scour depth could more readily be extrapolated to full-scale values. Sediment samples were taken by the sponsor at the proposed point of discharge which is about 500 ft downstream of Barney's Point. The samples were taken at 50 ft intervals in a grid pattern consisting of six rows with six points in each row as indicated in Fig. 6. These samples were transmitted to the laboratory for analysis. A sieve analysis was made on each of the six samples in row A (5 ft from the shore) and selected locations in rows B through F for a total of 18 points. The size distributions of these samples were similar, and the results were averaged to obtain the composite size distribution curve presented in Fig. 7. The D_g is about 0.38 mm with some finer material down to about 0.04 mm (very fine sand) and some coarser material up to about 8 mm (fine

gravel). Most of the prototype sediment was in the medium to coarse sand classification. With the prototype sediment this small, selecting a bed material for the model was rather difficult. The sediment size if scaled down linearly by the scale ratio would require a fine silt in the model which would not be practical to use. A search was made for fine materials that could be used in the model. The smallest material found that would be practical to use was a Badger mixing sand which has a D_g of 0.096 mm and may be classified as a very fine sand. The size distribution of the sands used in the model are presented in Fig. 8. Because of the relatively high cost of this material and the difficulty expected in molding it, the decision was made to use the Badger sand only in the area of anticipated local scour. A locally available Bay City sand with a D_g of 0.55 mm was selected for the model base (Fig. 8). For the initial verification test the entire model was molded (as shown in Fig. 3) with the Bay City sand with a D_g of 0.55 mm. For later tests including the plant discharge, the area by the pipe outlets was remolded using the Badger sand with a D_g of 0.096 mm as outlined in Fig. 4. Although this material was not as fine as desired, it was felt that the qualitative results obtainable would be a fair indication of the local scour that might occur.

The size of the riprap for protection of the area at the pipe outlets was specified by Stone and Webster to be 12 in. rock. Suitable material for the model was obtained by selective sieving to achieve a model size range from 0.36 to 0.42 inches.

D. Test Conditions and Procedures

The flow conditions used to evaluate the local scouring and impact on navigation were specified by Stone and Webster and NSP and are listed in Fig. 9. The upstream river discharge is denoted as Q_T, the discharge on the right side of Barney's Point as Q_{42}, the discharge on the left side of Barney's Point or main river channel as Q_{25}, and the plant discharge as Q_D. The plant flow may be discharged through any or all four of the pipes depending on the flow rate and the operating schedule supplied by Stone and Webster. The operating schedule is reproduced in Fig. 10 and provides the basis for determining which pipes would be open for the various plant discharges as listed in Fig. 9. To prevent fish passage through the pipes, the velocity was kept above 8 fps and was a factor in the selection of pipes to be used.

In the first trial operation of the model, it was obvious that the flow from each of the two river inflow systems was not properly distributed and the flow directions were misaligned. The two manifolds were constructed with a series of holes facing upstream from which the flow issued. Each hole was provided with a sliding plate for flow adjustment purposes. By adjusting the various sliding plates, a uniform flow distribution from each manifold was achieved. Flow straightners cut to fit around the manifold pipes, placed perpendicular to the manifolds, and extending to the wire mesh baffle successfully aligned the flow entering the model. Initial observations were made using confetti spread on the water surface to indicate flow velocities and directions. Final adjustments of each manifold were based on a series of velocity readings taken downstream of the manifold with a pygmy current meter.

The basic test procedure for operating the model was essentially the same for all flow conditions. Before each test the erodible bed was molded to the original contours using the removable, overhead templates. The model was carefully backfilled to minimize disturbance to the bed until a substantial tailwater was established. The main river flow, flow around Barney's Point, and specified plant discharge were each set to the proper values. The tailwater was then adjusted to the elevation corresponding to the total river discharge. The initial tests were made with the entire bed molded using the Bay City sand with a D_g of 0.55 mm. For the first test the bed was molded to the original river contours, and the model operated according to flow condition 1, which does not include any plant discharge. The purpose of this test was to establish a reasonable flow distribution in the model and establish a basis for comparison. For the next two tests the outlet basin geometry was molded into the model at the pipe outlets and flow conditions 2 and 10 were run on the model. These tests provided a basis for comparison with later tests with the finer sand placed in the outlet basin area. During the initial tests flow directions were determined using a fine thread attached to a thin rod, and velocity readings were made with a pygmy current meter. The model was not operated for any specified length of time.

After these initial tests, the entire model was remolded and the Badger sand with a D_g of 0.096 mm was placed in the outlet basin area as outlined in Fig. 4. Flow conditions 2 through 10 were run with this

configuration, the model being remolded before each test. The model was run for a total time of 8 hours, which appeared to be adequate to achieve an equilibrium depth of scour. During the test period the flow directions were determined and velocities measured.

III. DISCUSSION OF EXPERIMENTAL RESULTS

A. Original River Bed - Flow Condition 1

The purpose of this initial test was to establish a reasonable flow distribution in the model and to provide baseline data for comparison. The model was molded to the configuration outlined in Fig. 3. Figure 11 is a plotting of the flow pattern and velocities at mid-depth for condition 1, which specifies a total river discharge (Q_T) of 12,000 cfs, zero plant flow (Q_D), and a tailwater elevation of 673.8 ft. The circles indicate points at which the mid-depth flow directions and velocity readings were observed. The velocity readings varied from less than 0.5 fps to 1.50 fps. Because of the internal friction present in the current meter, velocity values below 0.5 fps prototype scale were not reliable and therefore have been omitted as shown along the left edge of the navigation channel. It was possible to establish the flow directions at these points using the rod with the fine attached thread. Photos 1 and 2 show views of the surface flow pattern as delineated by the confetti streaks. Photo 1 is a view from a low level looking upstream at the proposed outlet area, and Photo 2 is a view from directly overhead. The overhead view was used to determine the flow pattern and velocities at the water surface presented in Fig. 12. Knowing the exact shutter speed, the surface velocities were determined by measuring the length of the confetti streaks. Experience has shown that the camera shutter speed will differ from the indicated setting. To obtain an accurate time for determining velocity values, a timer was placed on the right river bank so that it would appear in the picture. This timer may be seen in Photo 2 at the bottom of the picture. The timer had a disk which rotated one revolution per second. On the disk was a white line which swept out a white sector of a circle; the size of the section was dependent upon the camera shutter speed. The exact exposure time was then determined by measuring the sector angle and dividing by 360°.

Because of the limited ceiling height over the model, the photograph and the resulting flow pattern shown in Fig. 12 covered only the pertinent area in the region of the proposed outlet. In Fig. 12 distances along the river from about 550 to 1100 ft and across the river from about 0 to 400 ft are covered. These distances correspond to the same distances in Fig. 11 so that the flow pattern and velocities reported in Fig. 12 can be compared to those in Fig. 11. The agreement in data obtained by the two observation methods is quite good. The 1 fps velocity contour in Fig. 12 occurs about 250 to 270 ft from the right bank which generally agrees with the velocity values 250 ft from the shore as reported in Fig. 11. On both figures the velocities 300 to 400 ft from the shore are between 1 and 1.5 fps. It should be noted that the observations in Fig. 11 are at mid-depth and in Fig. 12 are on the water surface. This information correlates well with observations made on a Corps of Engineers model at the Waterways Experimental Station[1]. Their model included Lock and Dam No. 3 and about 1-3/4 miles of the river upstream of the dam. As the generating plant is about 1 mile upstream of the dam, the Corps of Engineers model included about 3/4 mile of the river above the plant. In one of their base tests the Corps observed velocities and current directions for a discharge of 15,000 cfs. The flow directions observed on the SAF model show good correlation with flow directions from the Corps' model. The flow velocities measured in the SAF model are somewhat lower than those measured in the Corps' model, as the discharge of 12,000 cfs was lower. Higher discharges could not be used in the SAF model. From the overall data correlation with the Corps' model, which included a considerable reach of the river above the plant, it was judged that this constituted a satisfactory verification of the SAF model.

B. Discharge Outlet Modification - Bed Material D_g = 0.55 mm

After the verification test, the proposed discharge outlet modification was molded in the model as outlined in Fig. 4, except that the

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[1]Department of the Army, Waterways Experiment Station, Corps of Engineers, Vicksburg, Miss., "Model Study of Lock & Dam No. 3, Mississippi River," a preliminary report, 1975.

entire model bed consisted of the Bay City sand with a D_g of 0.55 mm. Flow conditions 2 and 10 were selected for the two preliminary runs using this bed material.

1. Flow Condition 2

Flow condition 2 specifies an upstream discharge (Q_T) of 3390 cfs, a discharge on the right side of Barney's Point (Q_{42}) of -165 cfs (negative denotes upstream flow), a discharge in the main channel (Q_{25}) of 2135 cfs, a plant discharge (Q_D) of 1390 cfs, and a tailwater elevation of 674.4 ft. The plant flow is discharged through all 4 pipes, proportioned as shown in Fig. 9. This is considered a no wind condition and was selected to provide qualitative assessment of recirculation. The resulting flow pattern and velocities are presented in Fig. 13. In the vicinity of the outlet, the velocities were measured at the surface and at mid-depth. Where two values are given, the upper is the velocity near the surface and the lower is the velocity at mid-depth. If no numbers are shown, the velocity was too low to measure in the model and would be less than 0.5 fps prototype scale. If no direction arrows are shown, the flow direction was indeterminate. The centerline of the navigation channel is shown, as well as the edges of the channel at distances of 150 ft each side of the centerline. The trajectory of the jet from the outlet pipes extended across the river at about the angle of the pipes and impinged on the wall on the far side of the model. Most of the flow turned downstream with some deflecting upstream along the guide wall as shown by the flow arrows and velocity readings. As the model did not include the entire width of the river, the question arises as to how accurately this would represent the prototype phenomenon. One can speculate that in the prototype more of the jet energy would dissipate before impinging on the far river bank resulting in less upstream recirculation than indicated in the model. Some recirculation along the right bank back toward the outlet area also was observed as indicated in Fig. 13. Assuming the flow from the pipes is greater than 8 fps, the velocity readings show that the flow velocity is dissipated rather quickly near the outlet.

2. Flow Condition 10

Flow condition 10 specifies an upstream discharge (Q_T) of 12,000 cfs, a discharge on the right side of Barney's Point (Q_{42}), of 894 cfs, a discharge in the main river channel (Q_{25}) of 9686 cfs, a plant discharge

of 1390 cfs, and a tailwater elevation of 673.8 ft (Fig. 9). The observed flow pattern and velocities are shown in Fig. 14. With this higher river flow, the jets from the discharge pipes did not extend very far into the river. The flow is essentially directed downstream and is similar to the flow pattern for condition 1 which has no plant discharge and was shown in Fig. 11. Higher velocities occur towards the right bank for flow condition 10 as compared to condition 1. There is also a slight recirculation near the outlet.

C. Discharge Outlet Modification - Bed Material D_g = 0.096 mm

The model was prepared for evaluation of local scour by replacing the bed material in the region of the outlet with the finer Badger sand with a D_g of 0.096 mm. This area is outlined by the dashed line in Fig. 4. The entire model and outlet area was remolded using the templates described earlier and similarly remolded before each test run. Original contours of the river bed before the test runs are shown in Fig. 4 and in Photos 3, 4, and 5. Photos 3 and 4 show views from a low level looking upstream and Photo 5 a view from directly overhead. The contour lines are delineated by nylon cords placed on the bed which were removed before the test run.

For evaluation of local scour, test runs were made for each of the flow conditions from 2 through 10. The model was run for 8 hours, which appeared to be adequate to reach an equilibrium depth of scour. The flow direction was established using the thread indicator,velocity measurements were made with the pygmy current meter, and photographs were taken.

1. Flow Condition 2

Flow condition 2 has a low river discharge of 3390 cfs and a maximum plant discharge of 1390 cfs. This is a condition with a zero wind velocity. Photos 6, 7, and 8 show the flow pattern in the outlet area. Confetti streaks delineate the jet trajectory quite clearly, particularly in the close up views in Photos 7 and 8. The camera shutter speed was selected to give optimum streak lengths. The flow pattern and measured velocities are presented in Fig. 15. The flow pattern shown in Fig. 15 appears quite similar to the pattern in Fig. 13. Both are for flow condition 2 with different size bed material. The velocity values reported in the figures show some variation between the two tests. In repeating

the tests on the model it was noticed that the flow velocities would fluctuate considerably at times, and the flow pattern would change especially for conditions with the lower river flows. This created difficulty in making observations for low flows in the model and resulted in discrepancies in the data collected. The flow pattern and velocities at the water surface shown in Fig. 16 were determined from Photo 8 and compare reasonably well with the information in Fig. 15.

It is evident from the photos and the information presented in the figures, that for flow condition 2, some upstream recirculation occurs along the far or left side and also along the right bank near the outlet.

After an 8 hour run, the flows were stopped and the model drained. Photos 9 and 10 show the resulting scour pattern. The scour was evident only near the toe of the riprap apron as indicated by the small area of light-colored sand ripples. The maximum depth of erosion was down to elevation 650 ft for a depth of scour of about 2 ft. As the scour was confined to the region near the toe of the rock apron, the river bed contours surrounding the excavated outlet basin have not changed and therefore are not shown in the photos. The lighter regions outside the immediate vicinity of the outlet are not scour patterns and should be disregarded. The point of maximum scour is also shown in Fig. 15.

2. Flow Condition 3

Flow condition 3 is similar to flow condition 2 in that the upstream discharge, plant discharge, and the tailwater elevation are the same. Flow condition 3 includes a 10 mph south wind which causes an increase in recirculation on the right side of Barney's Point. The flow on the right side of Barney's Point (Q_{42}) achieved by siphoning is -540 cfs and the main channel flow (Q_{25}) is 2510 cfs (Fig. 9). Photos 11 and 12 show the surface flow pattern for flow condition 3 as delineated by the confetti streaks and may be compared to Photos 7 and 8 which show the pattern for flow condition 2. It is interesting to note that the jet trajectory appears similar in Photos 12 and 8 which are from overhead; however, when comparing Photo 11 with Photo 7 which are from low level looking upstream, the jet trajectory in Photo 11 has a noticeable deflection towards the right bank (left side of the picture). This is not evident in Photo 12. As mentioned earlier, the flow pattern did shift occasionally for the lower river flows which is indicated here.

Figure 17 shows the observed flow pattern and velocities, and Fig. 18 shows the flow pattern and velocities at the water surface developed from Photo 12. The velocities on the two figures compare favorably, but the jet trajectory indicated in Fig. 17 has a slight deflection toward the right bank. When comparing the flow pattern and velocities for condition 3 (Fig. 17) and condition 2 (Fig. 15) some variations are noted. Most noticeable is the reduced upstream recirculation along the right bank and the slight deflection of the jet trajectory toward the right bank for condition 3. After 8 hours of flow, the local scour at the toe of the rock apron had reached an elevation of 651.6 ft as shown in Photos 13 and 14 and Fig. 17. This is a rather insignificant scour depth of only 0.4 ft.

3. Flow Condition 4

Flow condition 4 specifies an upstream river flow of 3700 cfs, a low plant discharge of 150 cfs through the 5 ft diameter pipe, and a tailwater elevation of 674.4 ft (Fig. 9). This is the lowest plant discharge used in the model. The flow pattern for condition 4 is shown in Photos 15 and 16, and the pattern and velocities are plotted in Figs. 19 and 20. The flow pattern and velocities at the water surface presented in Fig. 20 were derived from Photo 16. The flow pattern is generally downstream and the velocities low, for the most part less than 0.5 fps. No measurable scour could be detected as indicated in Photo 17 and Fig. 19.

4. Flow Condition 5

Flow condition 5 has the same upstream river discharge of 3700 cfs and tailwater elevation of 674.4 ft. The plant flow has been increased to 350 cfs and was discharged through the 7 ft diameter pipe.

Photos 18 and 19 show the flow pattern in the outlet area and Figs. 21 and 22 present the flow pattern and velocities. Figure 22 was based on Photo 19. With the increase plant discharge, the velocities along the right bank also increased as indicated in a comparison of Figs. 21 and 22 (flow condition 5) with Figs. 19 and 20 (flow condition 4). The flow directions as well as velocities were indeterminate along the left side of the model as indicated by the absence of data on Fig. 21. By adjusting the shutter speed on the camera to obtain the most distinguishable confetti traces as shown in Photo 19, the flow pattern and velocities at the water surface were determined and presented in Fig. 22. The flow

pattern is essentially downstream and the jet trajectory deflected to the right and parallel to the bank.

After 8 hours of flow, the local scour reached an elevation of 651.7 ft as shown in Photo 20 and Fig. 21 for a minimal scour of only 0.3 ft.

5. Flow Condition 6

Flow condition 6 has the same upstream river discharge of 3700 cfs and tailwater elevation of 674.4 ft. The plant discharge has been increased to 700 cfs and was discharged through the 8 ft and 5 ft diameter pipes (Fig. 9).

Photos 21 and 22 show the flow pattern on the water surface using confetti. Figure 23 shows the flow pattern and velocities determined with the measuring equipment, and Fig. 24 the flow pattern and velocities at the water surface derived from Photo 22.

The flow jets emerging from the two open pipes are deflected to the right in a short distance and the higher velocity flow is parallel to the right bank. The effect on the navigation channel is minimal. A slow upstream recirculation is noted along the far left bank starting at a distance of 1300 ft but only extends upstream to a distance of 850 ft as indicated in Fig. 23. In comparing Fig. 24 with Fig. 23, some variations in the flow pattern are noticeable at distances 200 to 400 ft across the river. Again, this is probably due to a shift in the flow pattern, and also the very low flow velocities made it difficult to accurately determine the directions. The local scour is slight with only 0.1 ft detected at the toe of the rock apron at the location shown in Fig. 23 and Photo 23.

6. Flow Condition 7

Flow condition 7 specifies an upstream river discharge of 5000 cfs and the maximum plant discharge of 1390 cfs which is discharged through all four pipes (Fig. 9). The flow pattern for condition 7 shown in Photos 24 and 25, and Figs. 25 and 26, is similar to the pattern for condition 6. The jet trajectory is deflected to the right and the high velocity flow parallels the right bank. The upstream recirculation along the far left bank also occurs. In both of these areas the velocities are somewhat higher for condition 7 as compared to condition 6 as would be expected with higher discharges in both the river and from the plant. Local scour reached a depth of 0.5 ft at the location shown in Fig. 25 and Photo 26.

7. Flow Condition 8

Flow condition 8 has an upstream river flow of 6400 cfs and a plant discharge of 800 cfs through the 8 ft and 7 ft diameter pipes (Fig. 9). With this higher river flow and lower plant flow the overall flow pattern is in a downstream direction as indicated in Photos 27 and 28, and in Figs. 27 and 28. A slight reversal of flow occurs from a river distance of 900 ft back toward the outlet to distance 700 ft as indicated in Fig. 28. The main river channel remains essentially unaffected by this plant flow. Local scour of 0.6 ft was measured at the location shown in Fig. 27 and Photo 29.

8. Flow Condition 9

Flow condition 9 specifies an increased upstream river flow of 7500 cfs and the maximum plant discharge of 1390 cfs (Fig. 9). Pictures of the flow pattern with confetti streaks delineating the pattern are shown in Photos 30 and 31. The flow directions determined with the thread indicator and measured velocities are presented in Fig. 29. An area along the left side of the model has little motion and the flow directions could not be determined. Figure 30 shows the flow pattern and velocities at the water surface that were derived from Photo 31. Figure 30 compares quite well with Fig. 29. The flow pattern is characterized by the higher velocities along the right bank and lower unmeasurable velocities along the left bank. Local scour increased to a depth of 1.4 ft as indicated in Fig. 29 and Photo 32.

9. Flow Condition 10

Flow condition 10 specifies an upstream river discharge of 12,000 cfs, the maximum tested in the model, and the maximum plant discharge of 1390 cfs (Fig. 9).

Photos 33, 34, and 35 show the flow pattern delineated by confetti streaks. The pattern determined using the thread indicator and velocities measured with the pygmy current meter are presented in Fig. 31. The pattern and velocities determined from Photo 35 are shown in Fig. 32 and agree quite well with those in Fig. 31. As is evident in examining the figures, the flow velocities are higher along the right side of the river. A slight recirculation occurs along the right bank just downstream of the outlet. Figure 31 may also be compared with Fig. 11, which shows the flow pattern

and velocities at mid-depth with original river contours and for flow condition 1. The comparison shows the velocities have increased along the right side of the river when the plant is discharging the maximum flow of 1390 cfs as in flow condition 10. The local scour reached an elevation of 651.1 ft at the toe of rock apron at the location indicated in Fig. 31 and Photos 36, 37, and 38. This is a depth of scour of 0.9 ft. In these photos the contours outside of the outlet basin have been included and are the same as the original contours shown in Photos 3, 4, and 5. No erosion has taken place except the minimum local scour that occurred at the toe of the rock apron in the outlet basin.

IV. CONCLUSIONS

1. Good correlation of flow patterns and velocities observed on the laboratory model with the Corps of Engineers model provided a positive verification of the laboratory model.

2. For the lowest river flow of 3390 cfs and the maximum plant discharge of 1390 cfs (flow conditions 2 and 3), the jet trajectory from the discharge pipes extended across the model impinging on the far side. Most of the flow was turned downstream with some recirculated upstream. A recirculation along the right bank, back toward the outlet was also observed and was stronger for flow condition 2, which was a condition of zero wind velocity.

   For a river discharge of 3700 cfs and the lower plant discharged of 150 cfs and 350 cfs, which are flow conditions 4 and 5, respectively, the flow pattern is essentially downstream with some higher velocities along the right bank. For flow condition 6 which specifies an upstream river discharge of 3700 cfs and a plant discharge of 700 cfs, the jet was deflected and paralled the right bank. Also a slight recirculation occurred along the left side.

   For flow condition 7 which specifies an upstream river discharge of 5000 cfs and a plant discharge of 1390 cfs the jet trajectory also parallels the right bank. The velocities along the right bank and the recirculating velocities on the left side are higher for condition 7 as compared to condition 6.

   With higher upstream river discharges of 6400, 7500, and 12,000 cfs as specified in flow conditions 8, 9, and 10, respectively, the river flow appears dominant and the flow pattern is essentially downstream. The velocities are higher along the right bank.

3. The only erosion that occurred was confined to local scour at the toe of the rock apron in the outlet basin. The scour depths varied from

no measurable amount to 2.0 ft. For flow condition 2, the scour depth was the maximum of 2.0 ft and for condition 9 was 1.4 ft; for all other conditions the scour depth was less than 1.0 ft. The outlet basin with the protection riprap was quite effective in keeping scour to a minimum.

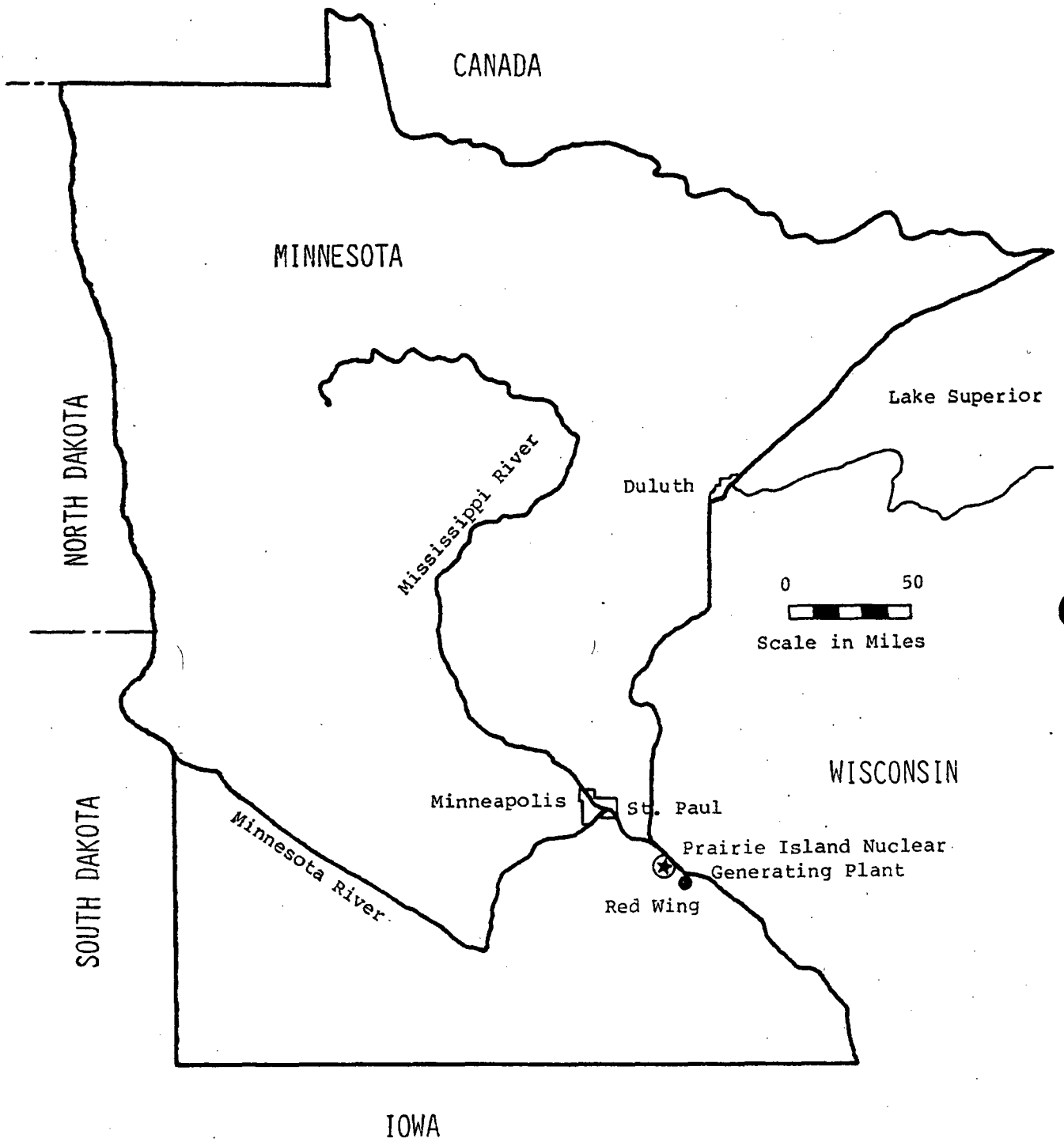


Fig. 1. Location of Prairie Island Nuclear Generating Plant.

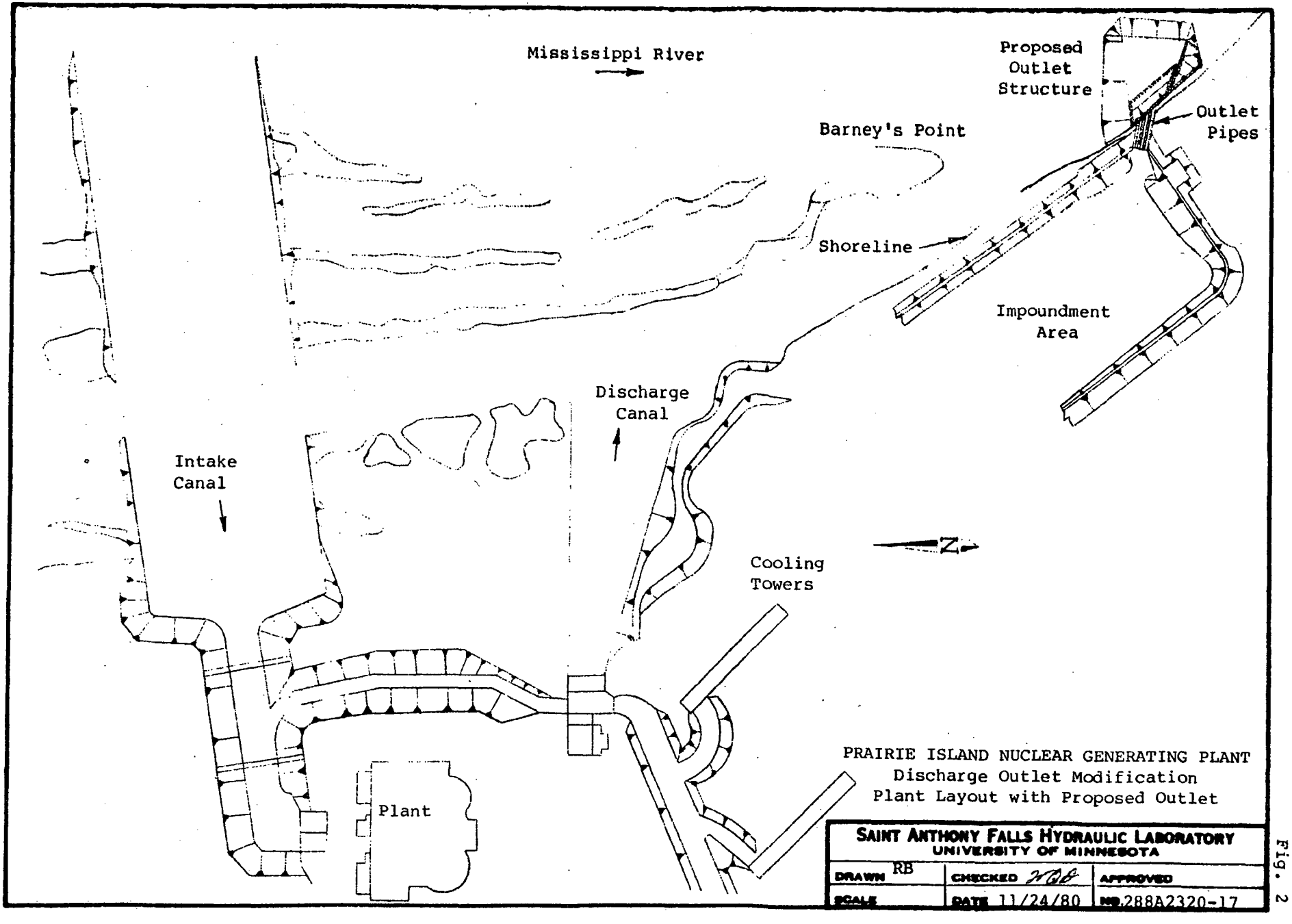
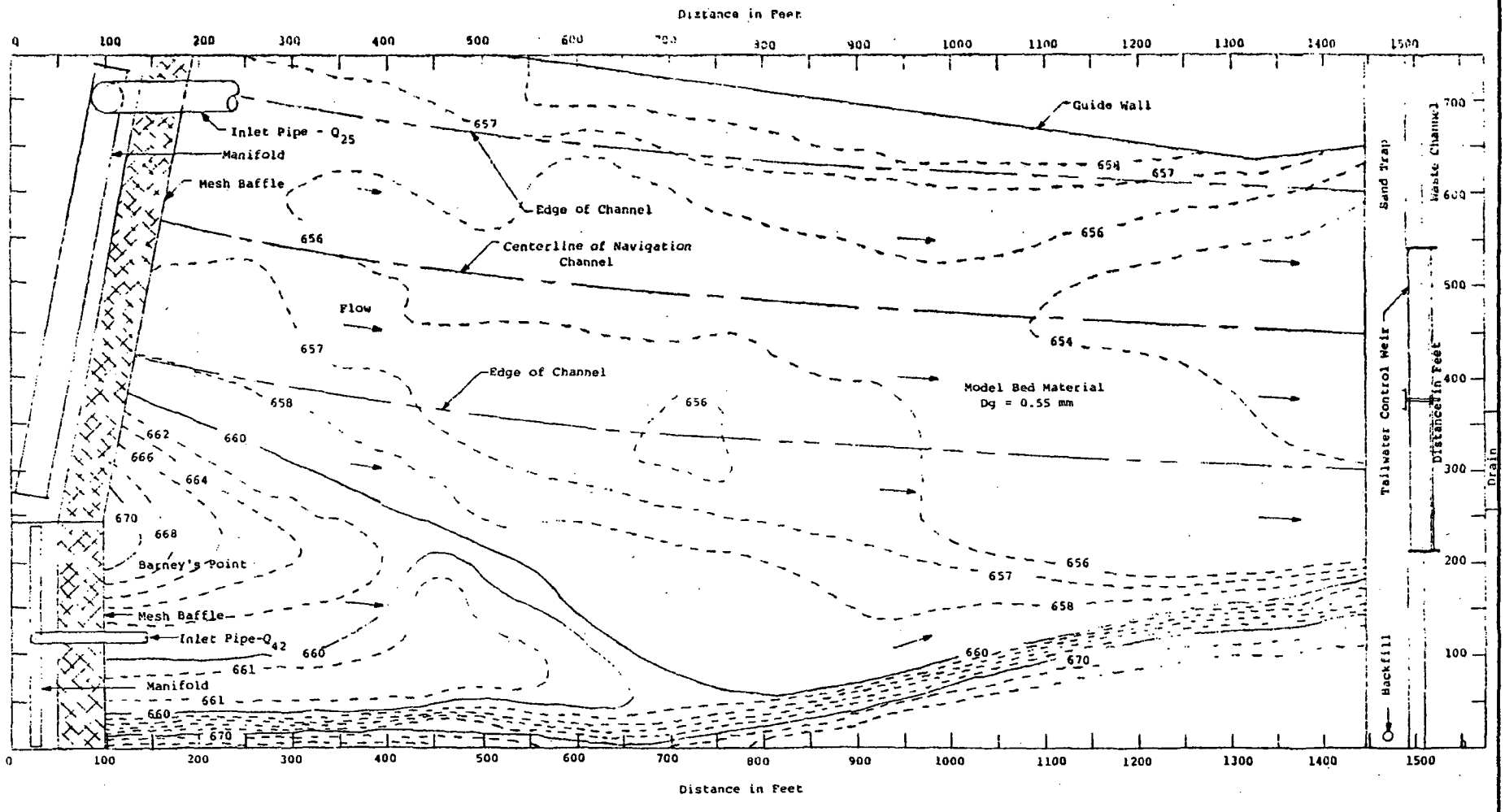

Mississippi River
Proposed Outlet Structure
Outlet Pipes
Barney's Point
Shoreline
Impoundment Area
Discharge Canal
Intake Canal
Cooling Towers
N
Plant
PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Plant Layout with Proposed Outlet
SAINT ANTHONY FALLS HYDRAULIC LABORATORY
UNIVERSITY OF MINNESOTA
DRAWN RB
CHECKED
APPROVED
SCALE
DATE 11/24/80
NO. 288A2320-17

Fig. 2



PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Model Layout With Original River Contours
Model Scale 1:32
Contour Elevations are in Feet

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
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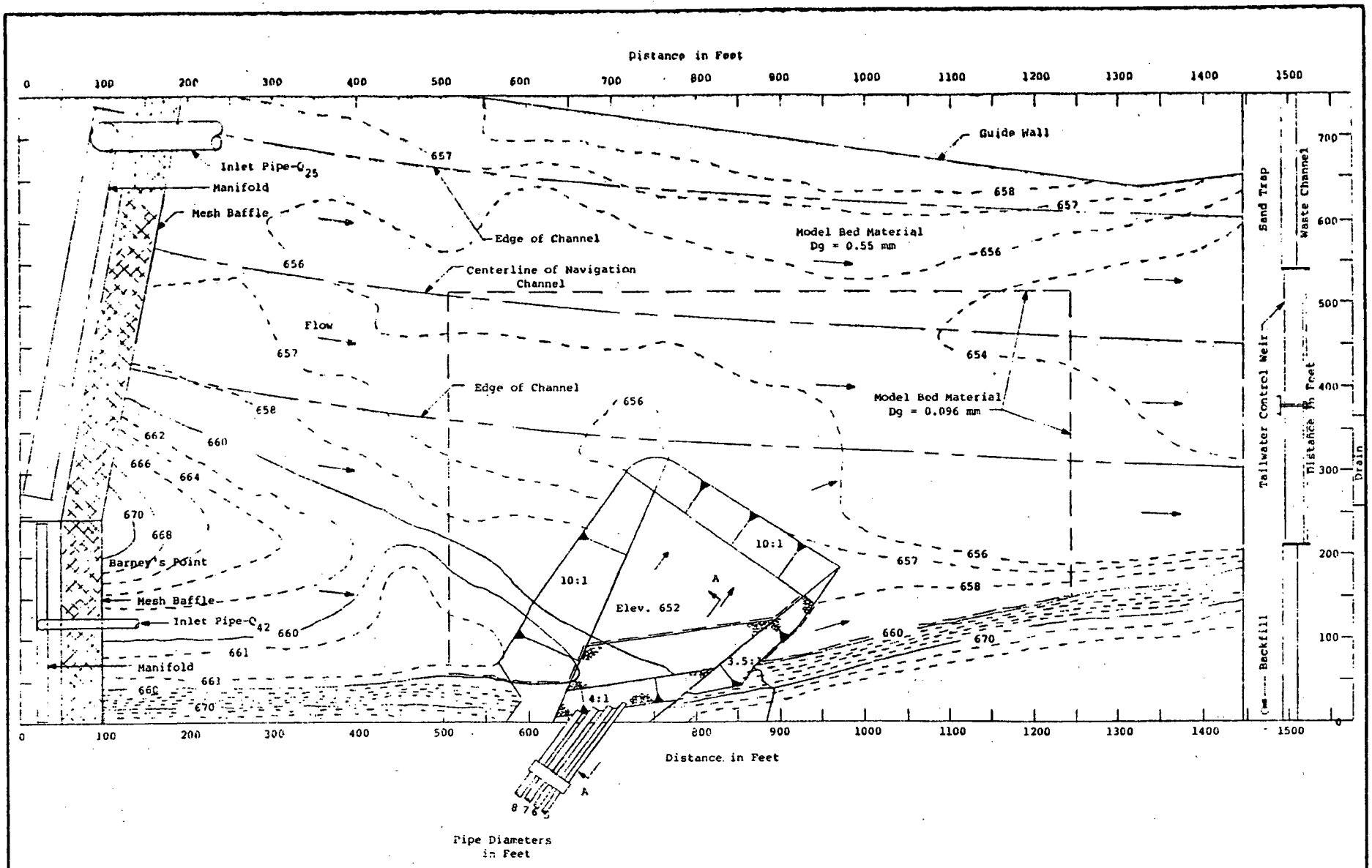
SCALE	DATE 5/8/80	NO. 2888510-1

Fig. 3



PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Model Layout With Discharge Structure
Model Scale 1:32
Contour Elevations are in Feet

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
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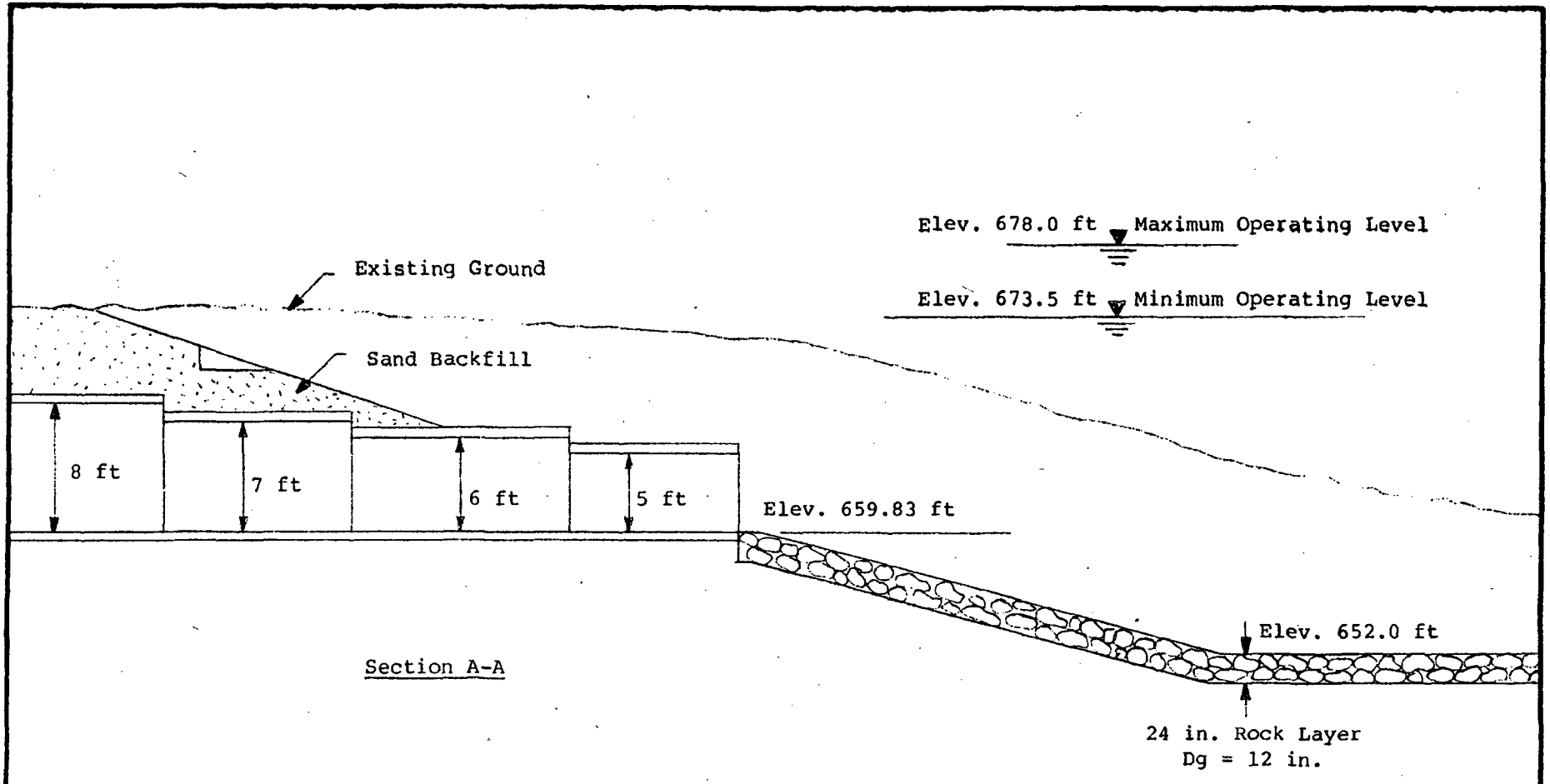
SCALE	DATE 5/8/60	NO 285B510-2

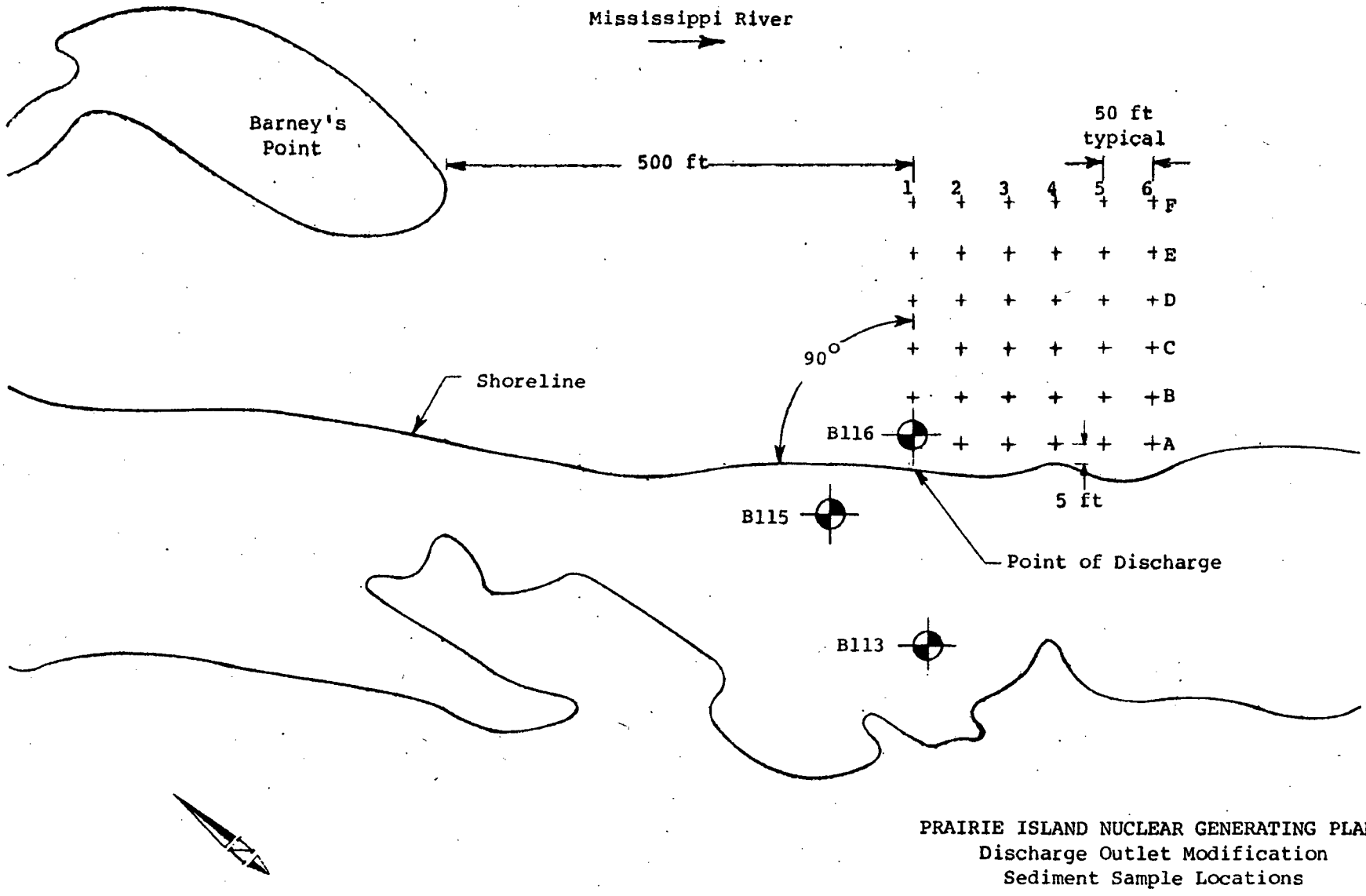
Fig. 4



PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Model Layout With Discharge Structure
Model Scale 1:32

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 6/13/80	NO. 288A2320-1

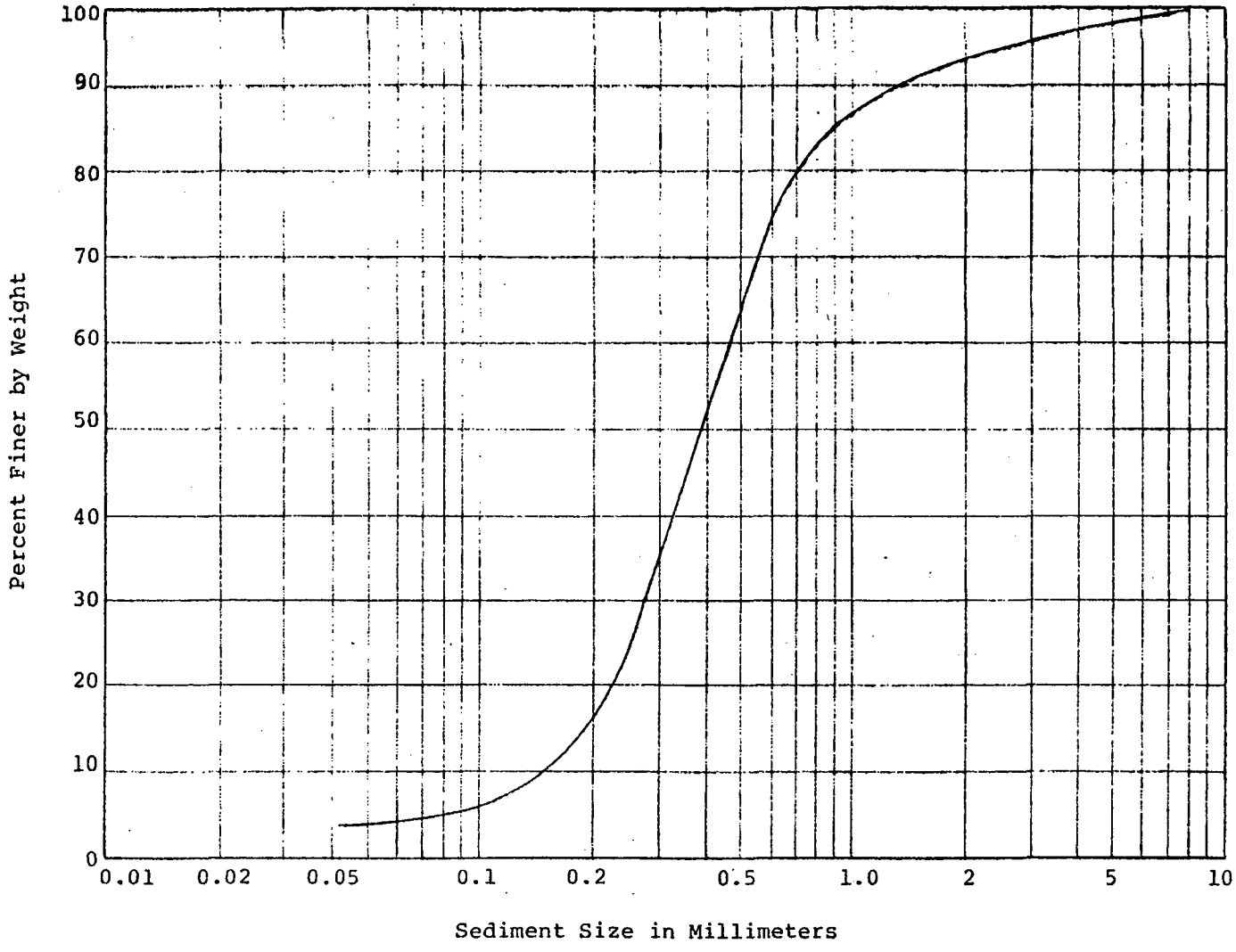
Fig. 5



PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Sediment Sample Locations

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN RB	CHECKED	APPROVED
SCALE	DATE 11/24/80	NO. 288A2320-16

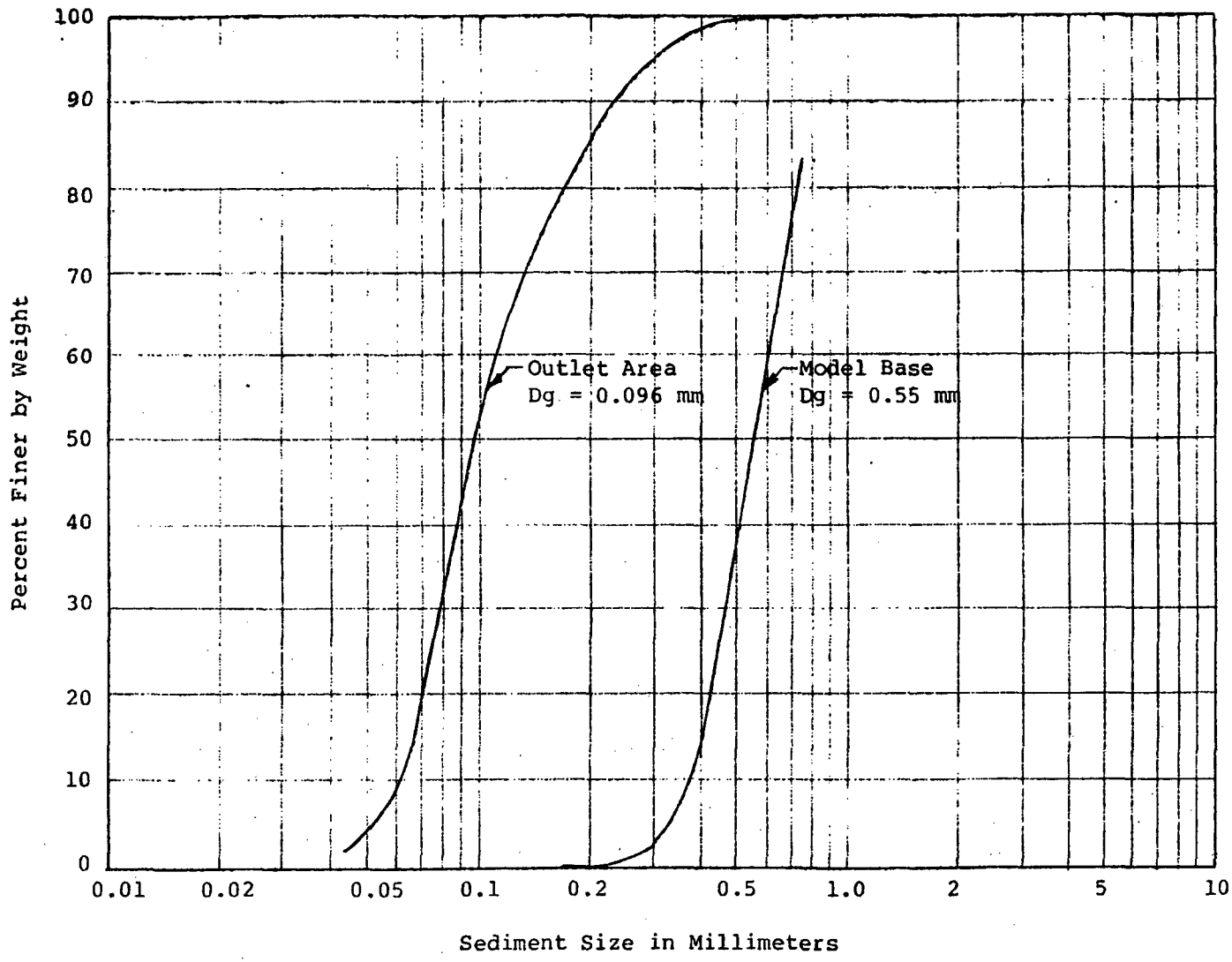
Fig. 6



PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Composite Size Distribution of Prototype Samples

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 6/13/80	NO. 288A2320-2

Fig. 7



PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Size Distribution of Sands Used in the Model
Model Scale 1:32

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 6/13/80	NO. 288A2320-3

Fig. 8

FLOW CONDITIONS INVESTIGATED

Flow Condition No.	Upstream Discharge Q_T - cfs	Q_{42}^{*} cfs	Q_{25}^{**} cfs	Plant Discharge Q_D - cfs	Pipe Discharges - cfs 8 ft dia.	7 ft dia.	6 ft dia.	5 ft dia.	T.W. Elev. ft	Comments
1	12,000	1314	10,656	0					673.8	Existing Discharge
2	3,390	-165	2,135	1,390	521	394	284	197	674.4	No Wind
3	3,390	-540	2,510	1,390	521	394	284	197	674.4	10 mph south wind
4	3,700	329	3,191	150				150	674.4	
5	3,700	291	3,029	350		350			674.4	
6	3,700	193	2,777	700	521			197	674.4	
7	5,000	106	3,474	1,390	521	394	284	197	674.4	
8	6,400	457	5,113	800	455	345			674.3	
9	7,500	409	5,671	1,390	521	394	284	197	674.2	
10	12,000	894	9,686	1,390	521	394	284	197	673.8	

*Discharge on right side of Barney's Point

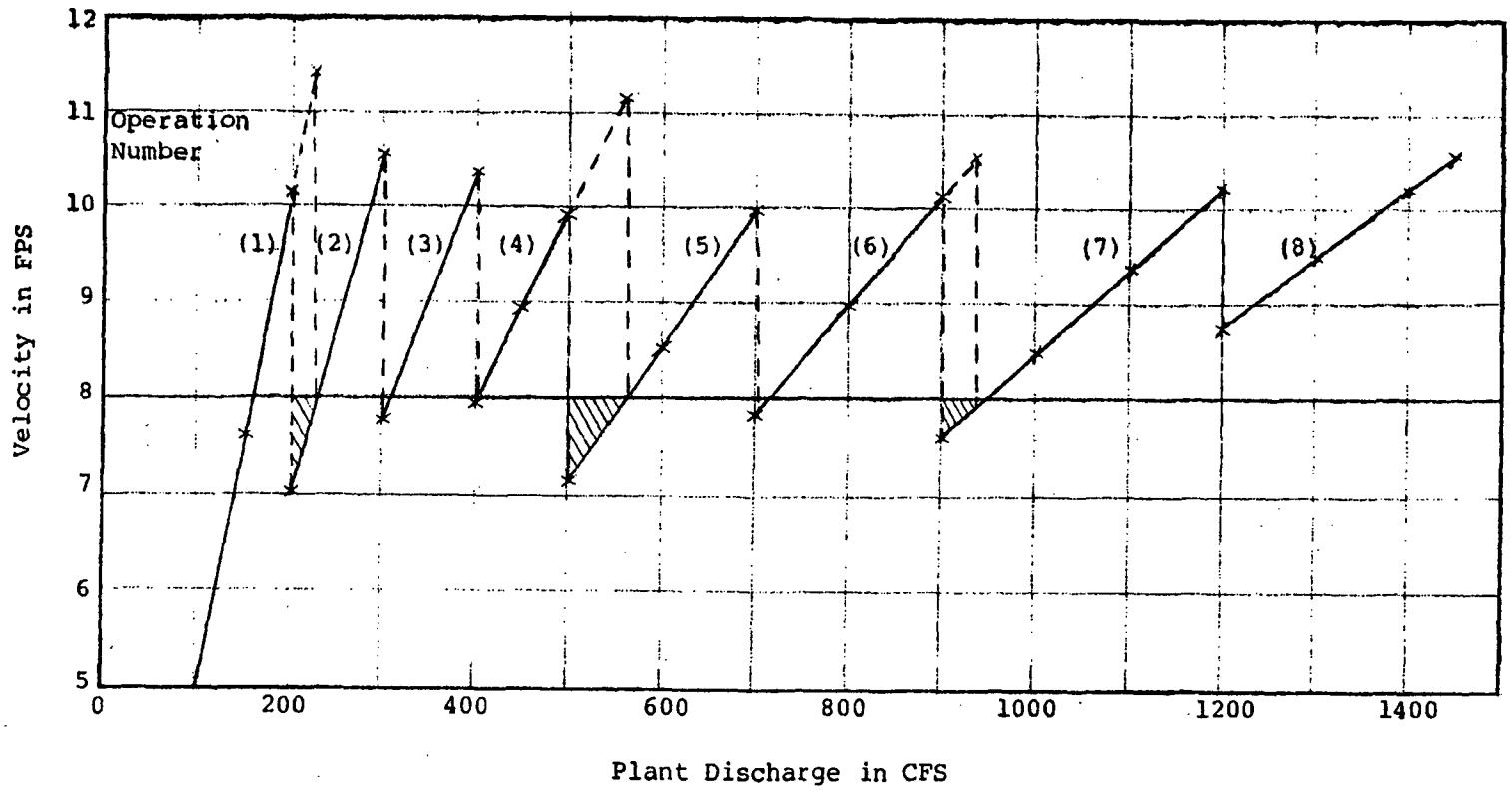
**Discharge in main river channel (left side of Barney's Point)

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Conditions Investigated
Model Scale 1:32

SAINT ANTHONY FALLS HYDRAULIC LABORATORY
UNIVERSITY OF MINNESOTA

DRAWN WQD	CHECKED WOS	APPROVED
SCALE	DATE 11/24/80	NO. 288A2320-15

Fig. 6



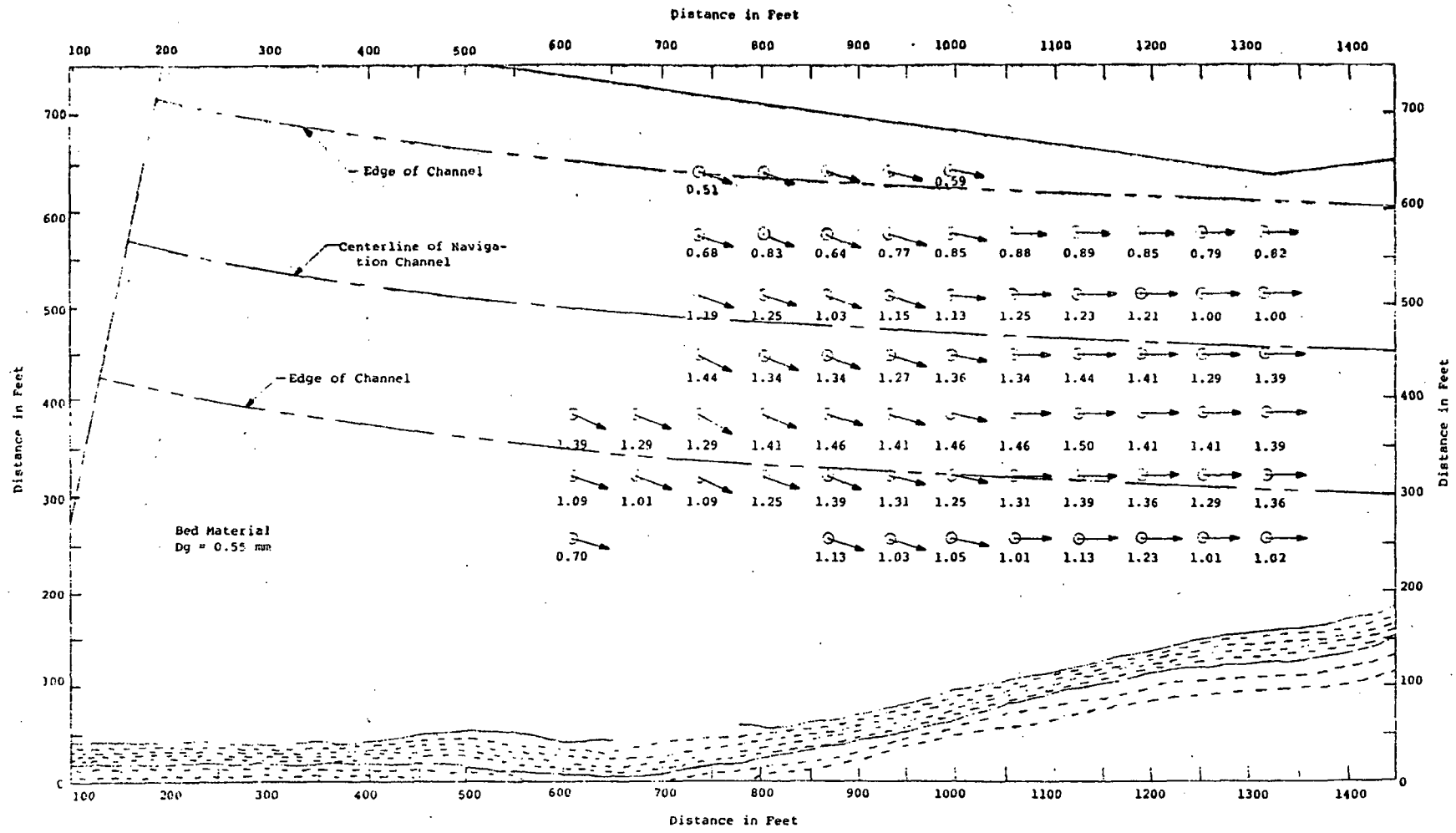
Plant Discharges Tested-cfs	Operation Number	Pipes Open Diameter in ft
150	1	5
-	2	6
350	3	7
-	4	8
700	5	8 and 5
800	6	8 and 7
-	7	8, 7 and 6
1390	8	8, 7, 6 and 5

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Operating Schedule for Plant Discharges
Model Scale 1:32

SAINT ANTHONY FALLS HYDRAULIC LABORATORY
UNIVERSITY OF MINNESOTA

DRAWN RB	CHECKED	APPROVED
SCALE	DATE 1/24/80	NO. 288A2320-14

Fig. 10



Velocity less than 0.5 fps, direction indeterminate

Velocity less than 0.5 fps, direction as indicated

Velocity in fps, direction as indicated

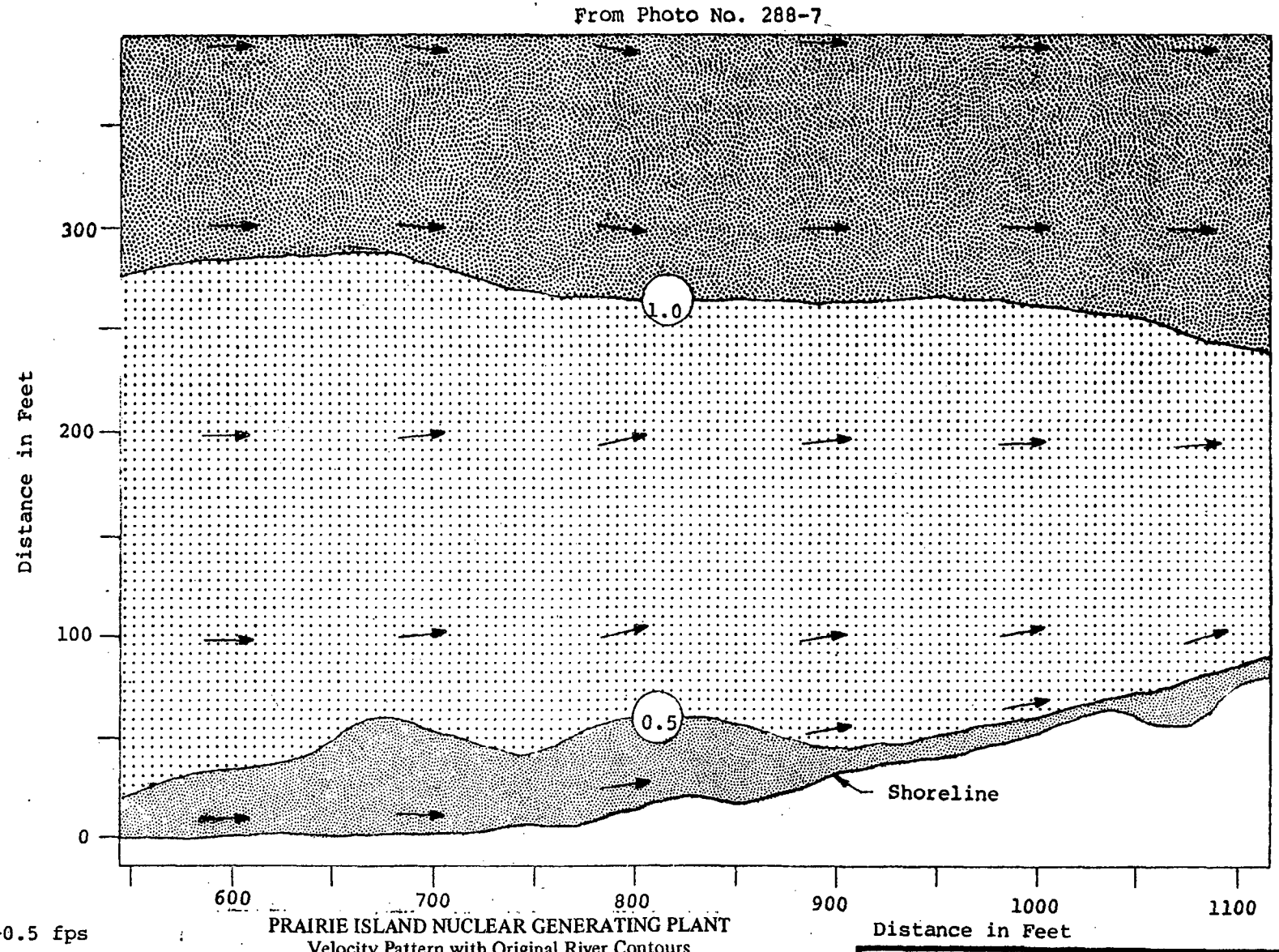
1.39

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Velocity Pattern With Original River Contours
Flow Pattern and Velocities at Mid-Depth
Flow Condition 1, Model Scale 1:32
Q_T=12,000 cfs, Q_D=0 cfs, T.W.=673.8 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY
UNIVERSITY OF MINNESOTA

DRAWN DA	CHECKED	APPROVED
SCALE	DATE 5/12/80	NO. 288B510-3

Fig. 11



0-0.5 fps

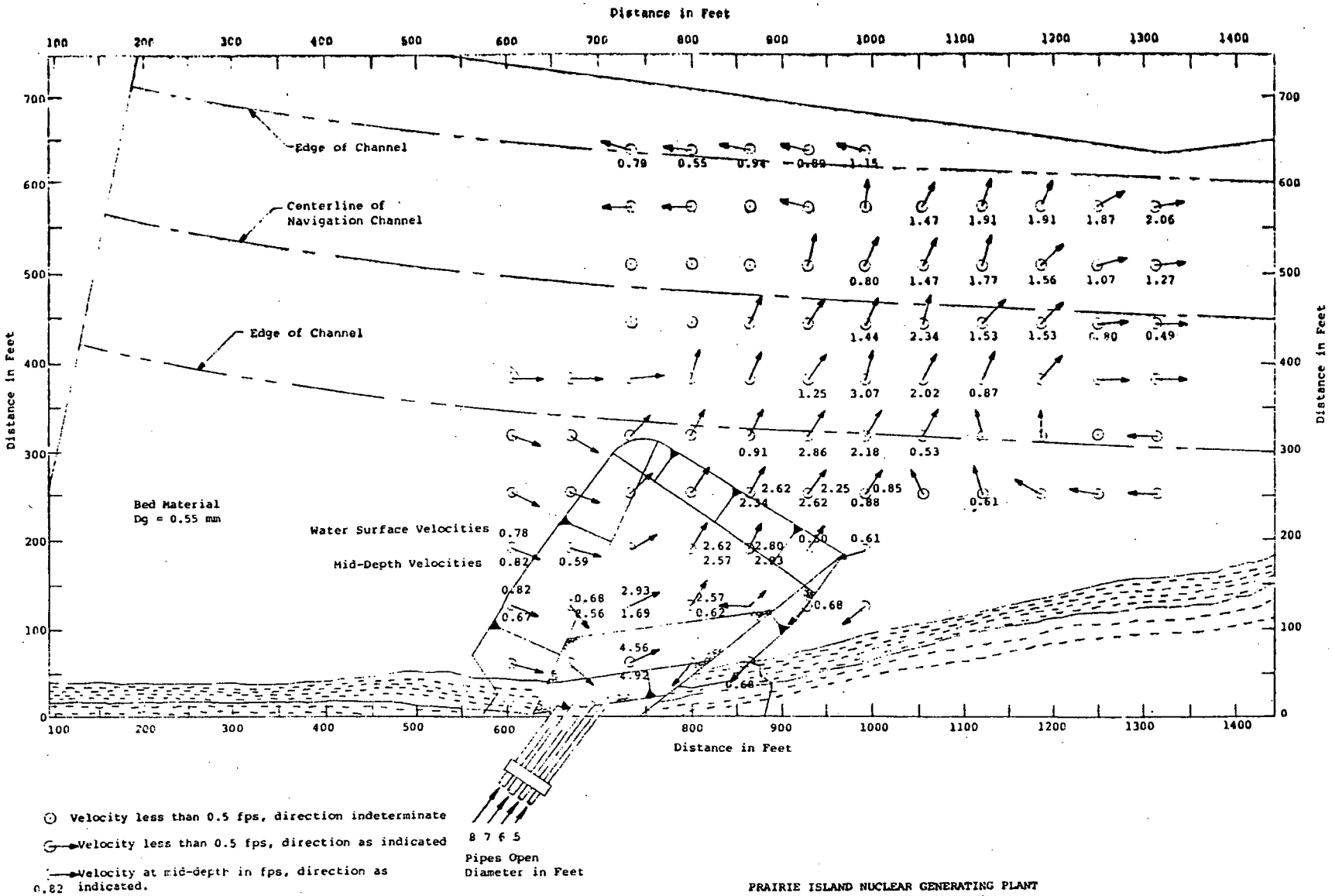
0.5-1.0 fps

1.0-1.5 fps

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Velocity Pattern with Original River Contours
Flow Pattern and Velocities at the Water Surface
Flow Condition 1, Model Scale 1:32
Q_T = 12,000 cfs, Q_D = 0 cfs, T.W. = 673.8 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 7/1/80	NO. 288A2320-4

Fig. 12



⊙ Velocity less than 0.5 fps, direction indeterminate

Velocity less than 0.5 fps, direction as indicated

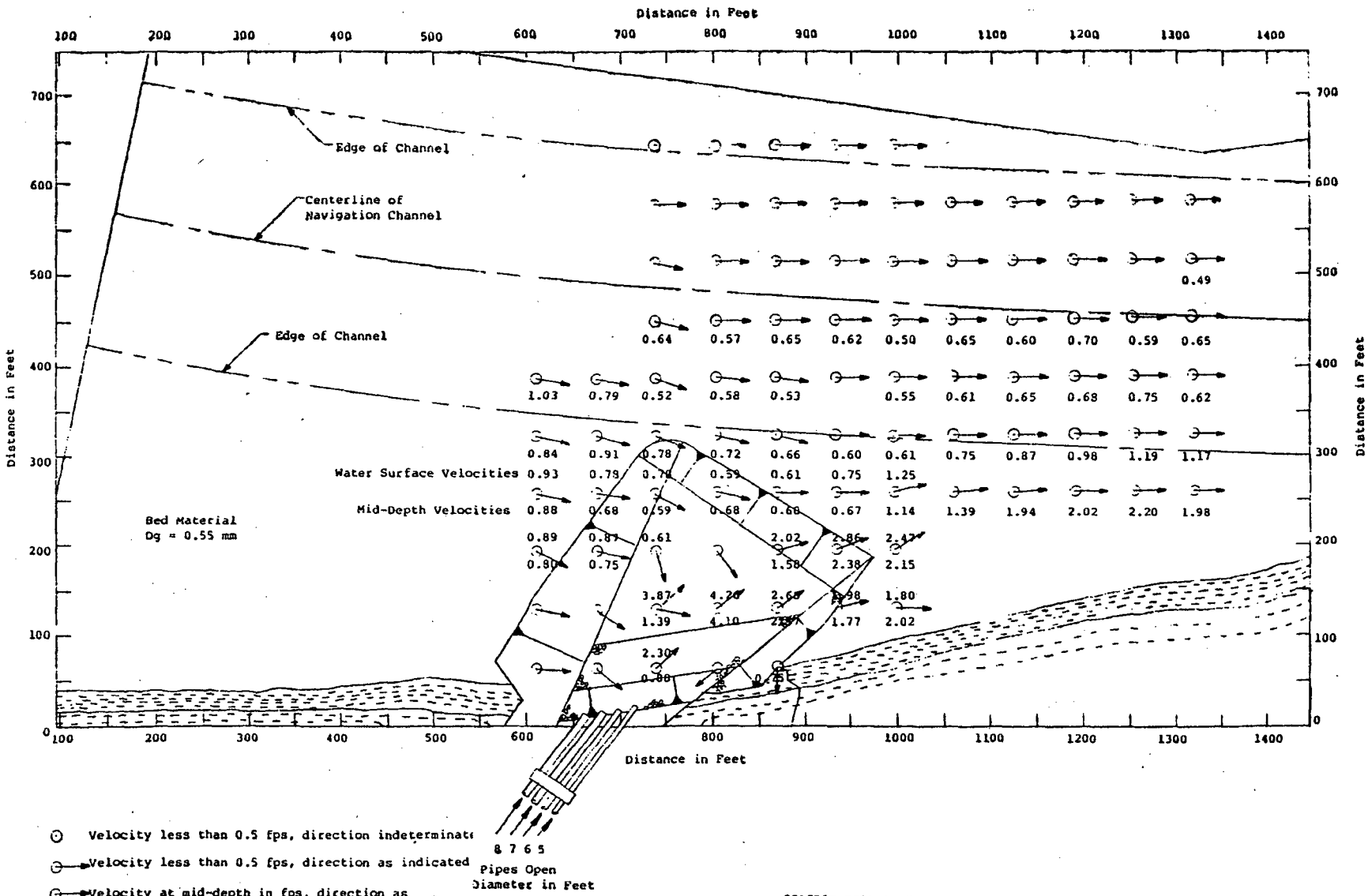
0.82 Velocity at mid-depth in fps, direction as indicated.

0.78 Velocity at water surface in fps, direction if different from mid-depth

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities
Flow Condition 2, Model Scale 1:32
Q_T=3390 cfs, Q_D=1390 cfs, T.W.=674.4 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 5/14/80	NO. 286B510-4

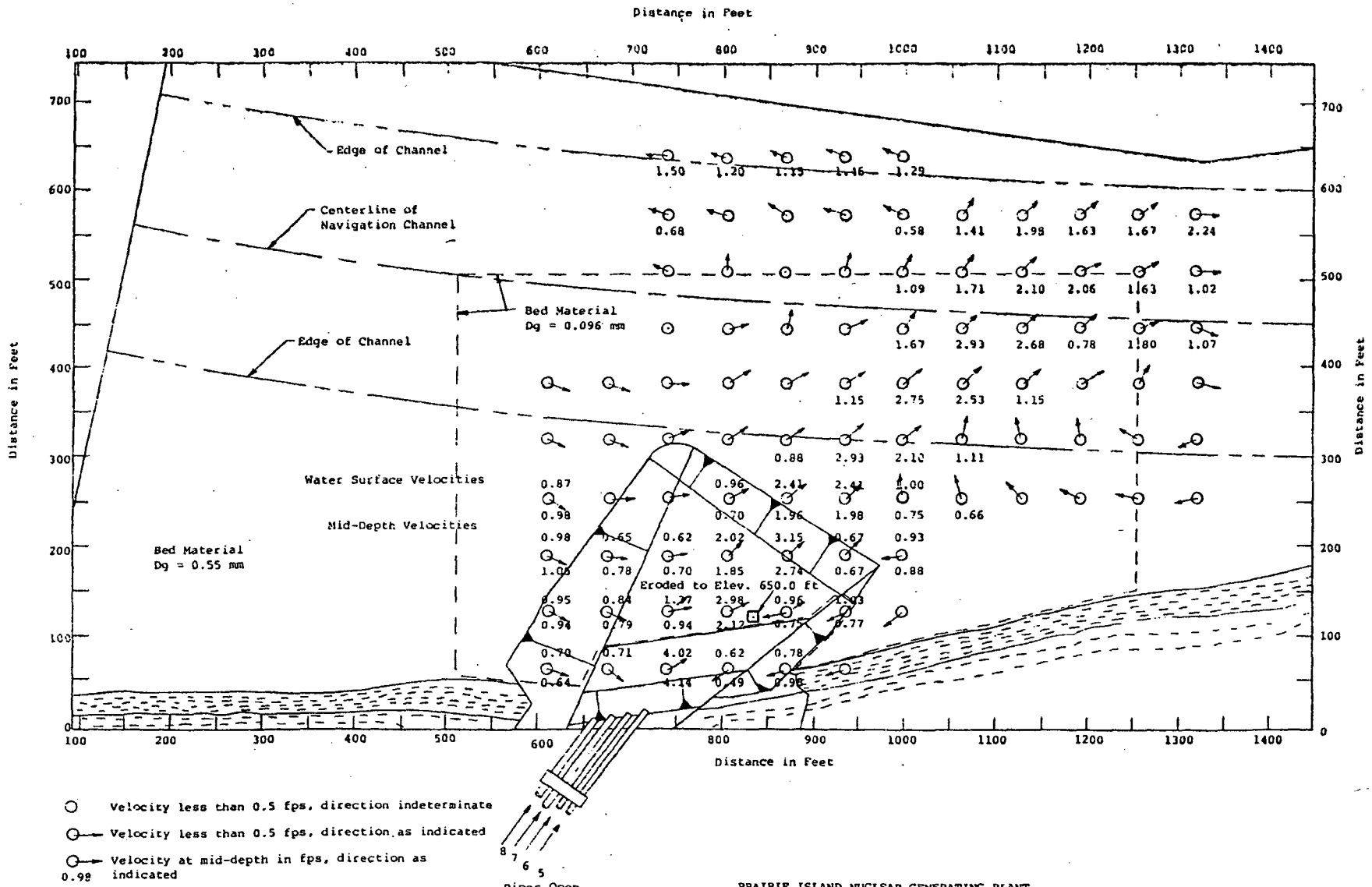
Fig. 13



PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities
Flow Condition 10, Model Scale 1:32
Q_T=12000 cfs, Q_D=1390 cfs, T.W.=673.8 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 5/14/80	NO. 288B510-5

Fig. 14



Velocity less than 0.5 fps, direction indeterminate

Velocity less than 0.5 fps, direction as indicated

Velocity at mid-depth in fps, direction as indicated

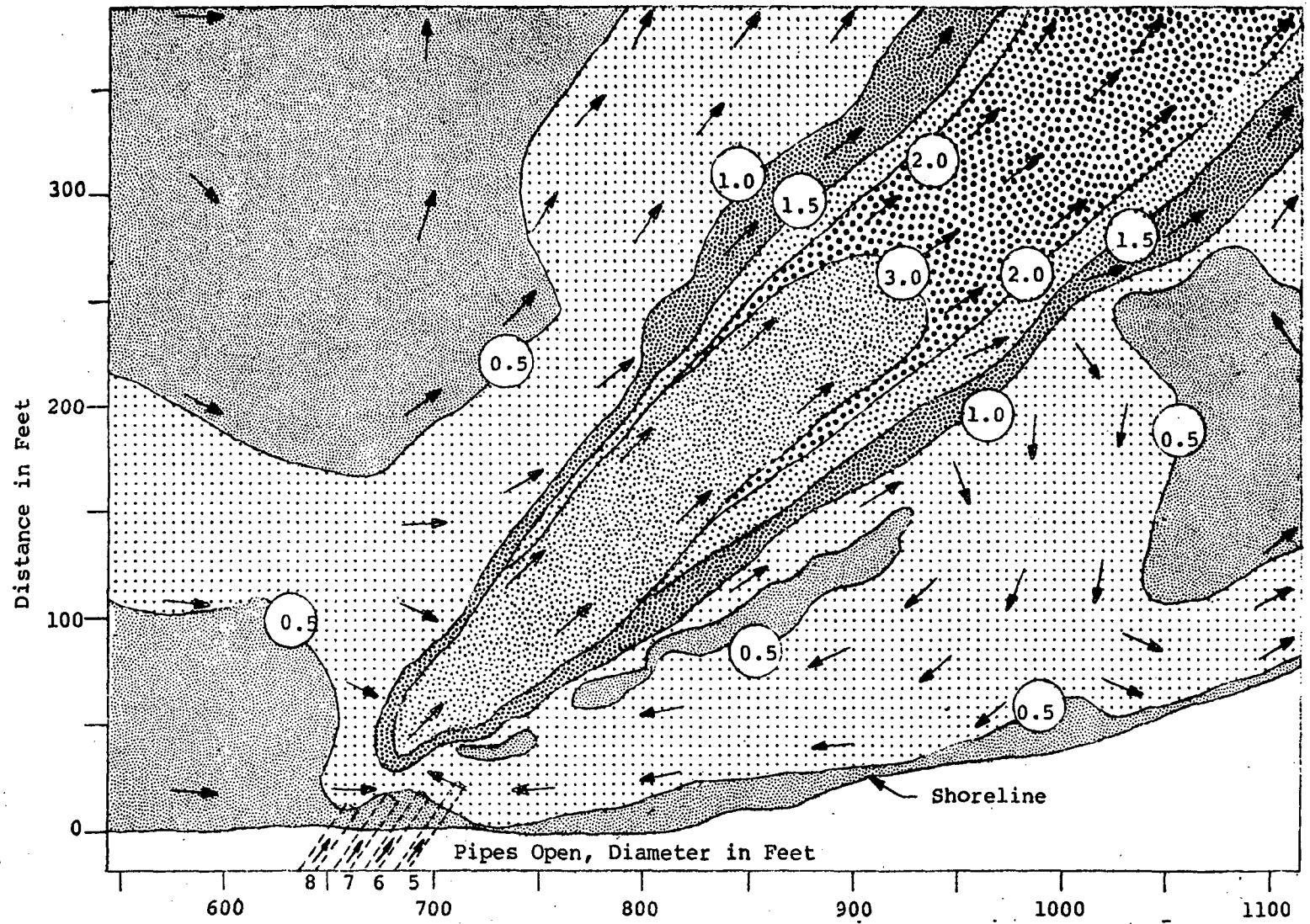
0.99
0.87
Velocity at water surface in fps, direction if different from mid-depth

Maximum erosion depth after 8 hours of flow, elev. 650.0 ft

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities
Flow Condition 2, Model Scale 1:32
Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED WQD	APPROVED
SCALE	DATE 5/14/80	NO. 288B[illegible]6

Fig. 15



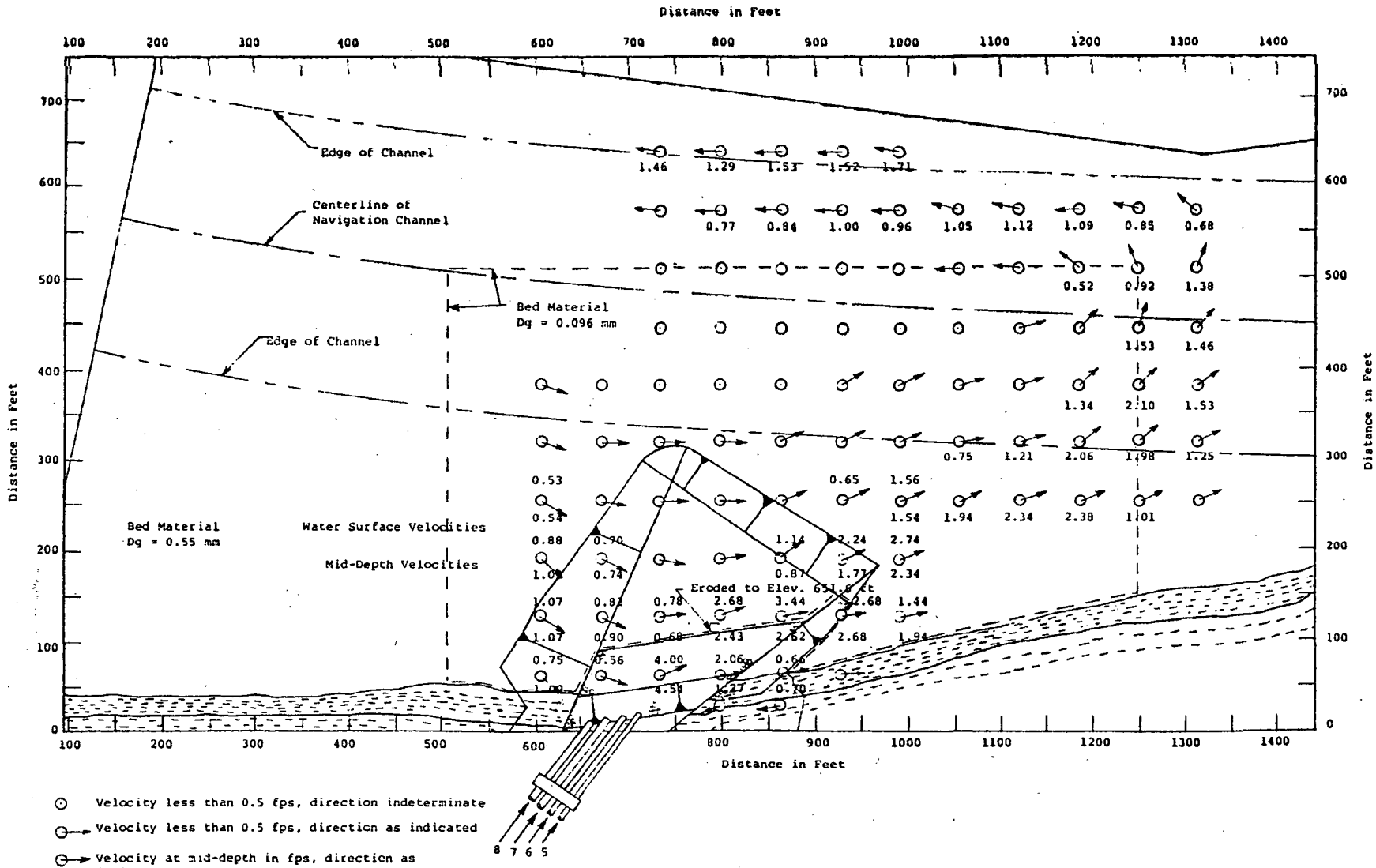
0-0.5 fps
0.5-1.0 fps
1.0-1.5 fps
1.5-2.0 fps
2.0-3.0 fps
> 3.0 fps

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities at the Water Surface
Flow Condition 2, Model Scale 1:32
Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY
UNIVERSITY OF MINNESOTA

DRAWN DA	CHECKED	APPROVED
SCALE	DATE 7/1/80	NO. 288A2320-5

Fig. 16



Velocity less than 0.5 fps, direction indeterminate

Velocity less than 0.5 fps, direction as indicated

Velocity at mid-depth in fps, direction as indicated

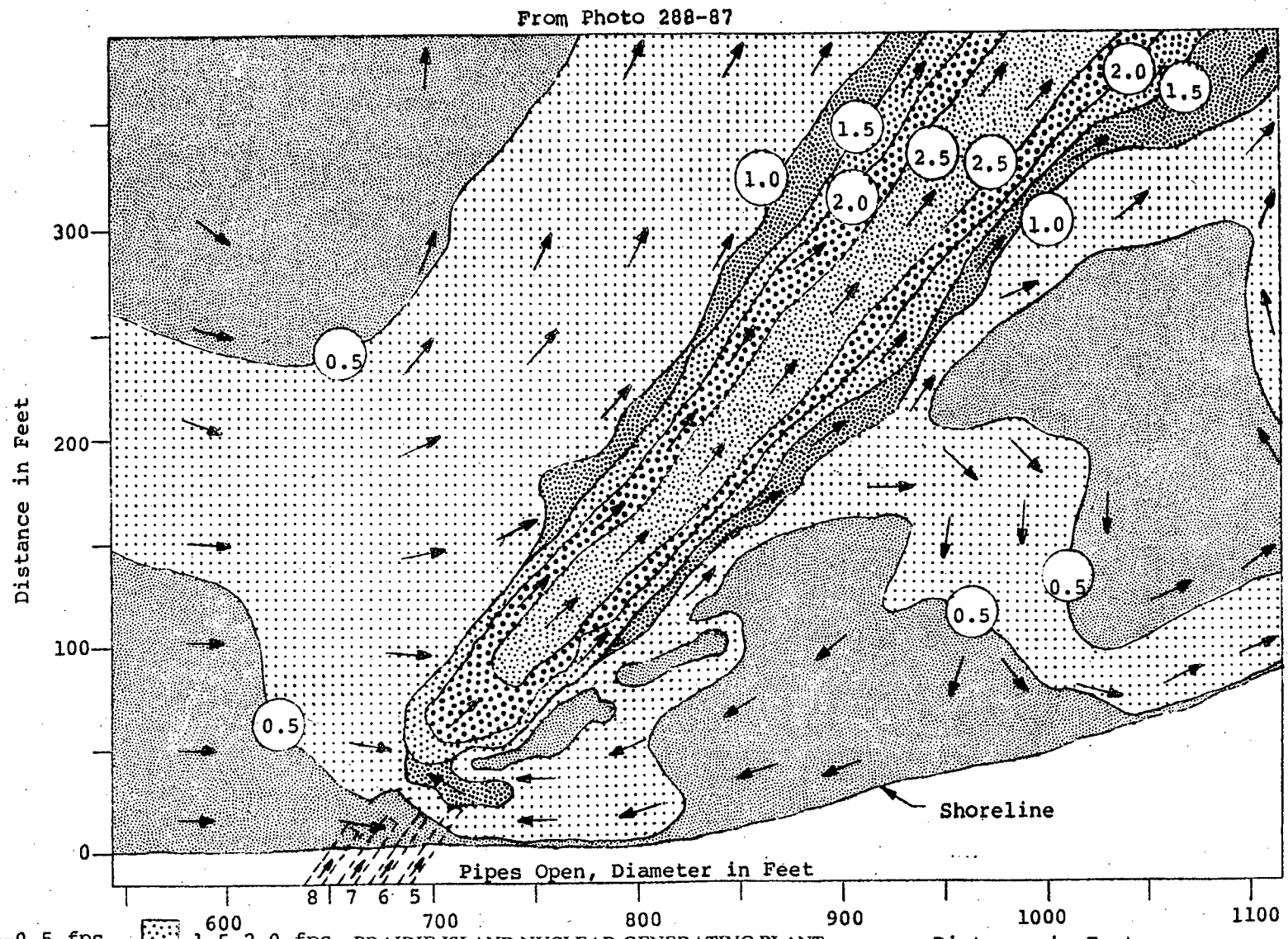
1.03 0.88 Velocity at water surface in fps, direction if different from mid-depth

Maximum erosion depth after 8 hours of flow, elev. 651.6 ft

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities
Flow Condition 3, Model Scale 1:32
Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED WQD	APPROVED
SCALE	DATE 6/12/80	NO. 288B510-8

Fig. 17



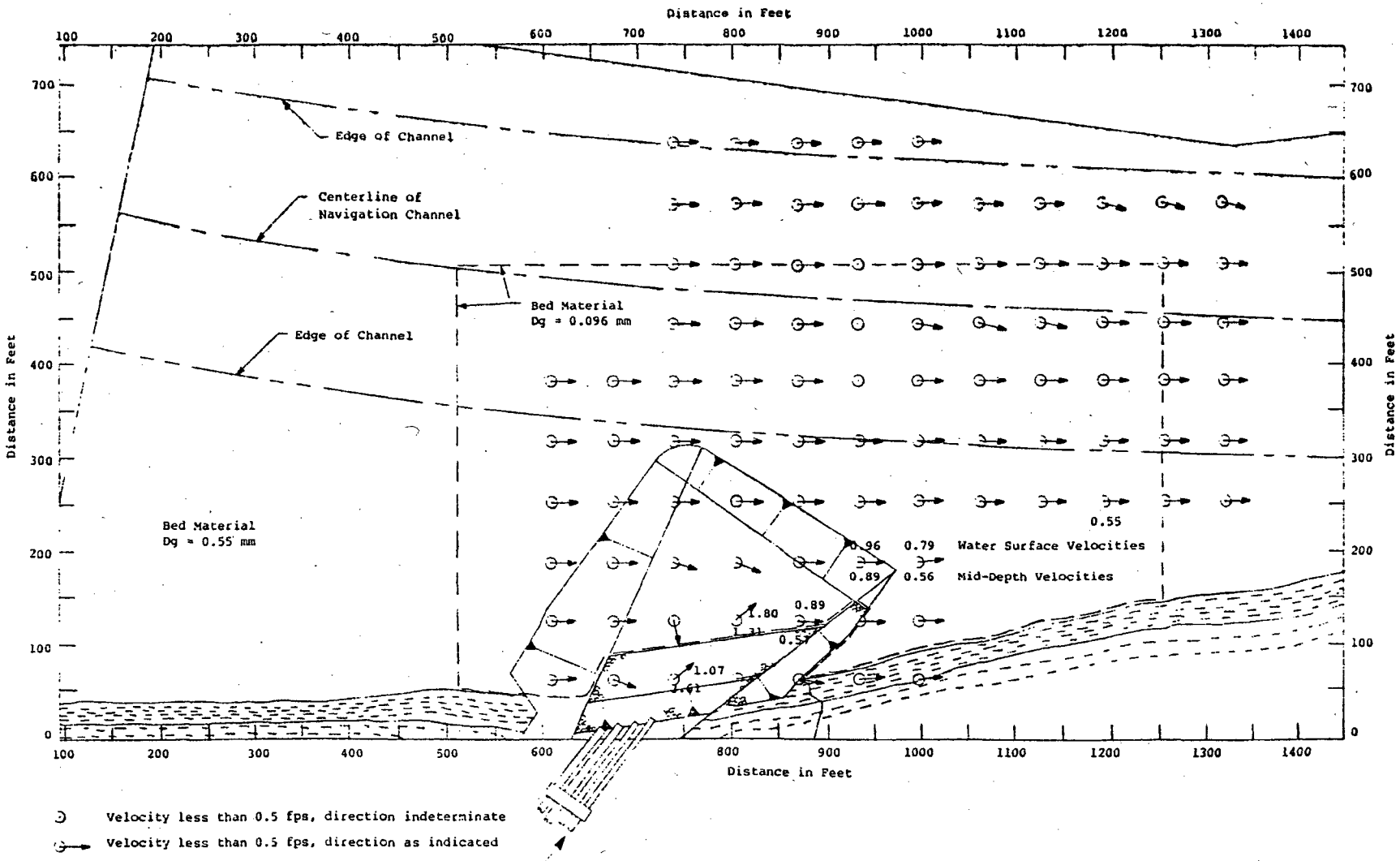
0-0.5 fps
0.5-1.0 fps
1.0-1.5 fps
1.5-2.0 fps
2.0-2.5 fps
> 2.5 fps

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities at the Water Surface
Flow Condition 3, Model Scale 1:32
Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY
UNIVERSITY OF MINNESOTA

DRAWN DA	CHECKED MOF	APPROVED
SCALE	DATE 7/1/80	NO. 288A2320-6

Fig. 18



Velocity less than 0.5 fps, direction indeterminate

Velocity less than 0.5 fps, direction as indicated

0.56 Velocity at mid-depth in fps, direction as indicated

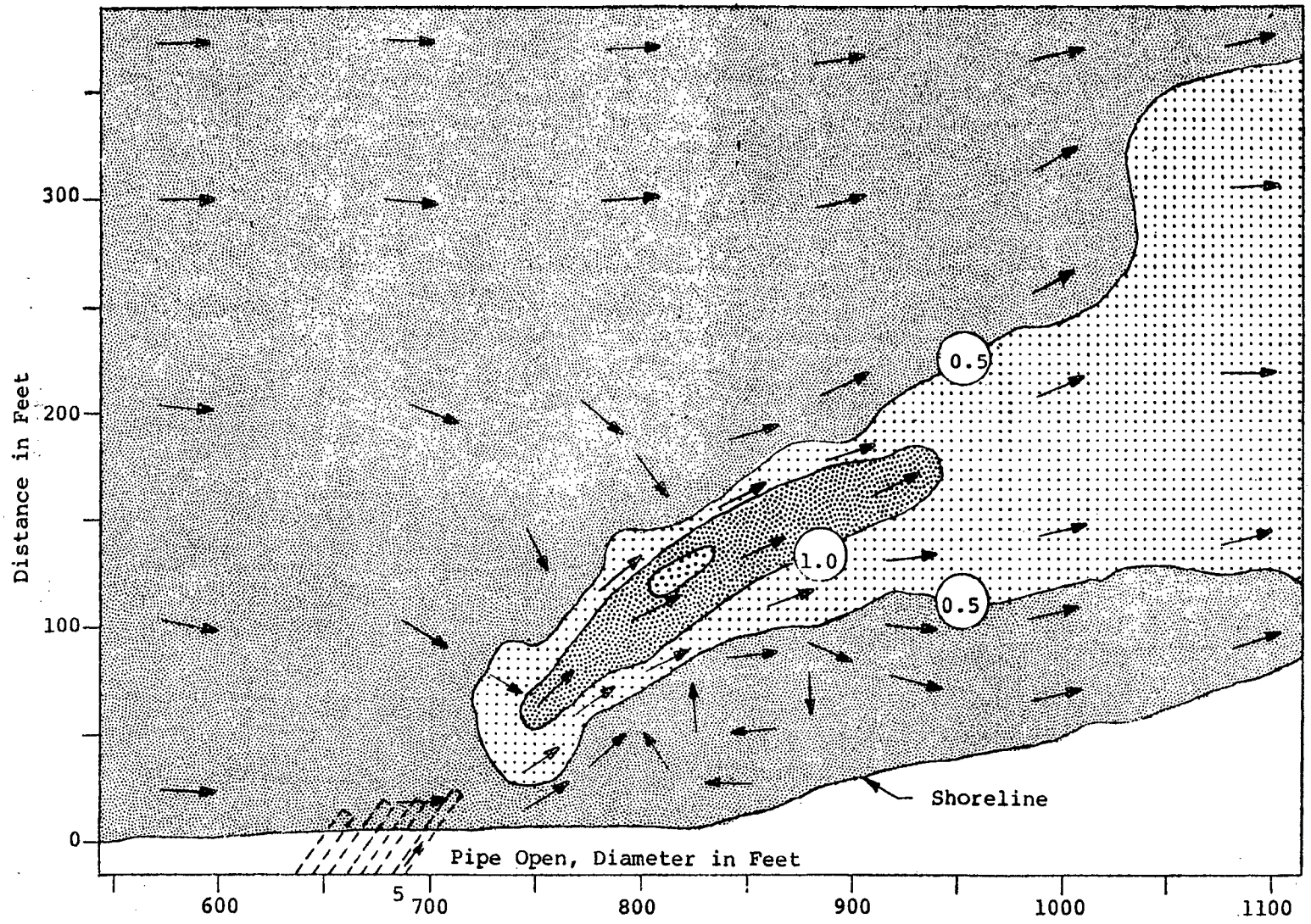
0.79 Velocity at water surface in fps, direction if different from mid-depth

No measurable erosion

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities
Flow Condition 4, Model Scale 1:32
Q_T=3700 cfs, Q_D=150 cfs, T.W.=674.4 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 5/12/80	NO. 288B510-9

Fig. 19



0-0.5 fps

0.5-1.0 fps

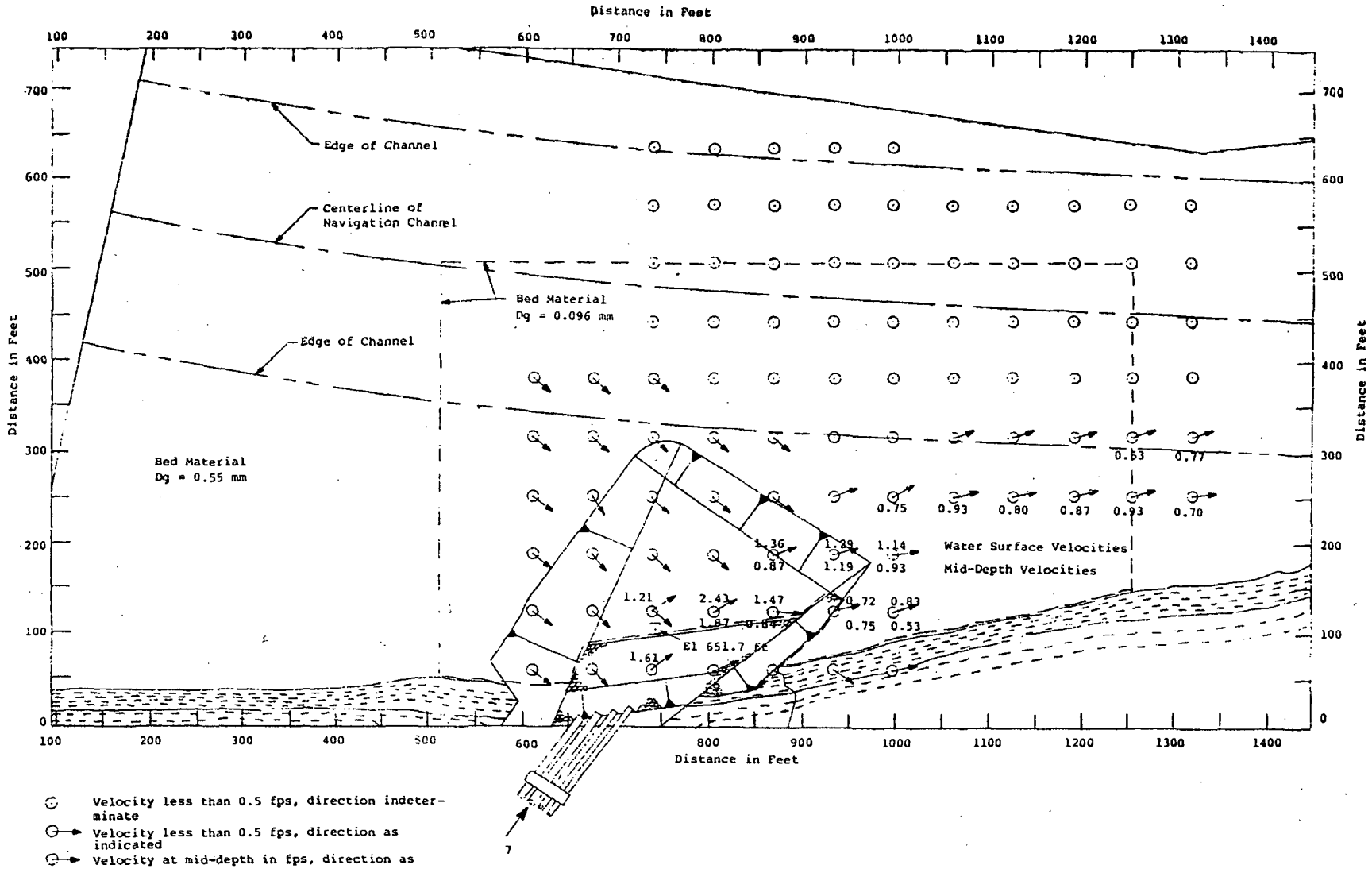
1.0-1.5 fps

1.5-2.0 fps

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities at the Water Surface
Flow Condition 4, Model Scale 1:32
Q_T = 3700 cfs, Q_D = 150 cfs, T.W. = 674.4 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 7/1/80	NO. 288A2320-7

Fig. 20



Velocity less than 0.5 fps, direction indeterminate

Velocity less than 0.5 fps, direction as indicated

0.93 Velocity at mid-depth in fps, direction as indicated

1.14 Velocity at water surface in fps, direction if different from mid-depth

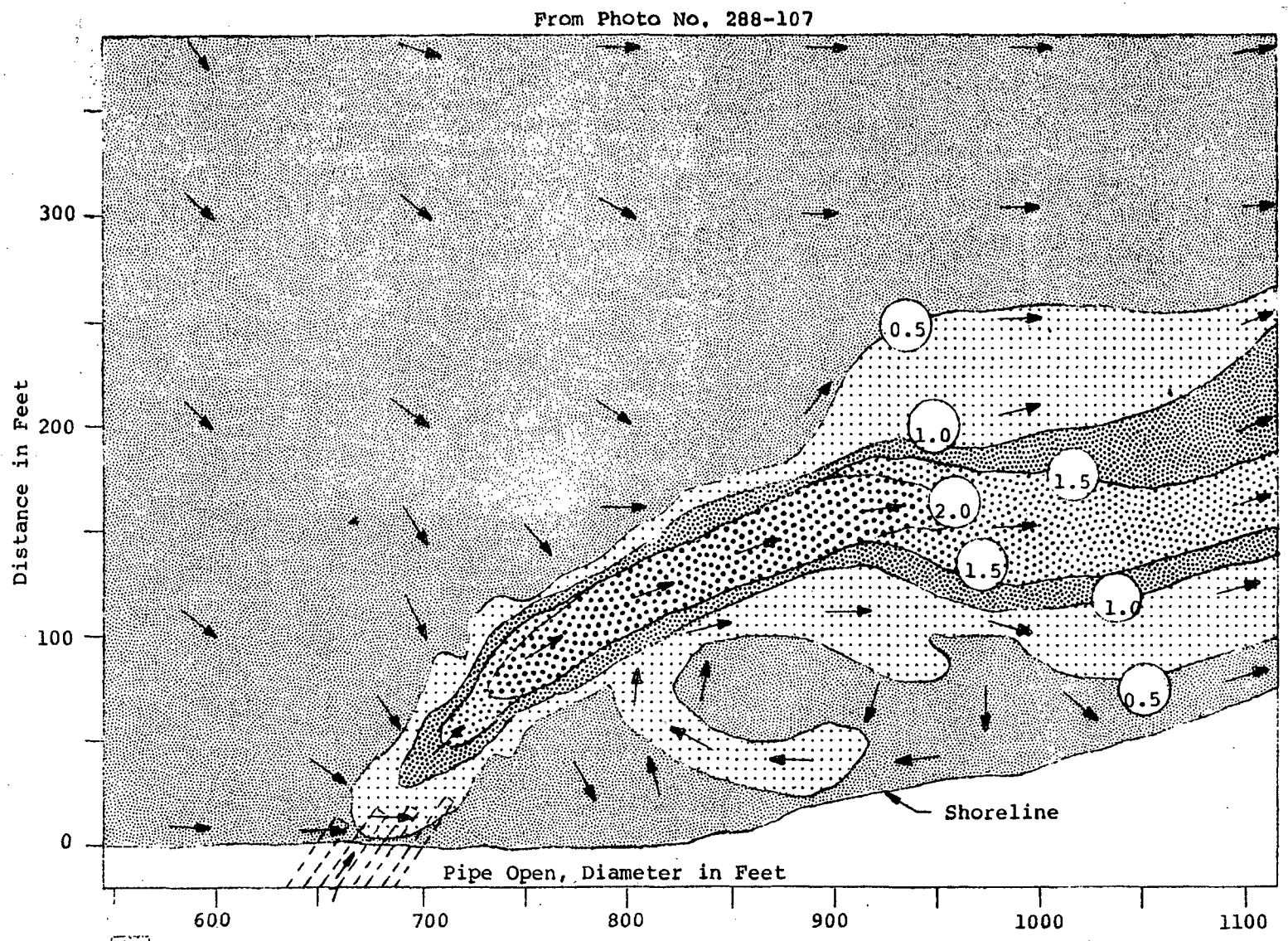
Maximum erosion depth after 8 hours of flow, elev. 651.7 ft

Pipe Open Diameter in Feet

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities
Flow Condition 5, Model Scale 1:32
Q_T=3700 cfs, Q_D=350 cfs, T.W.=674.4 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 6/12/80	NO. 288B510-10

Fig. 21



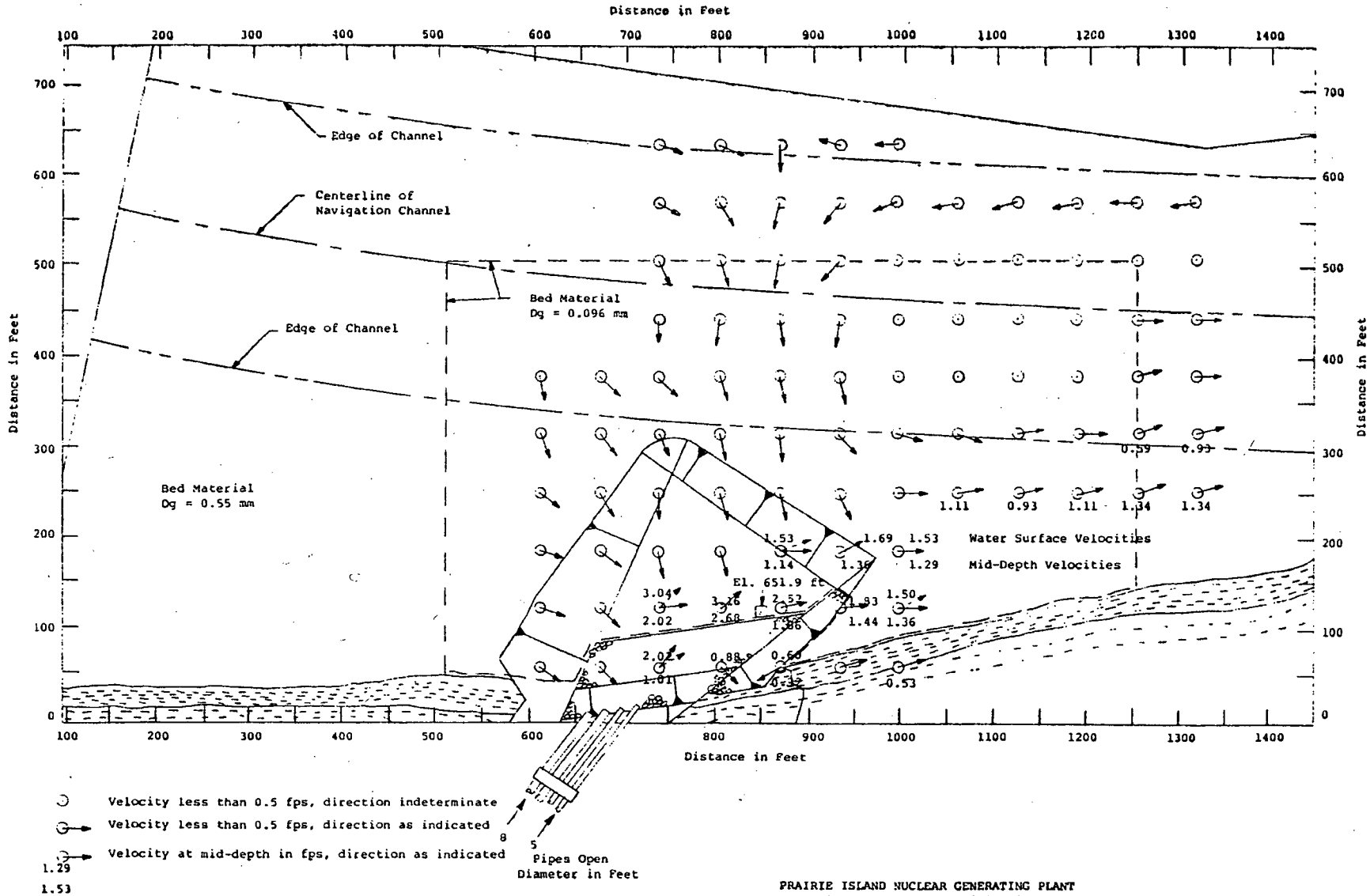
0-0.5 fps
0.5-1.0 fps
1.0-1.5 fps
1.5-2.0 fps
> 2.0 fps.

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities at the Water Surface
Flow Condition 5, Model Scale 1:32
Q_T = 3700 cfs, Q_D = 350 cfs, T.W. = 674.4 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY
UNIVERSITY OF MINNESOTA

DRAWN DA	CHECKED	APPROVED
SCALE	DATE 7/1/80	NO. 288A2320-8

Fig. 22



Velocity less than 0.5 fps, direction indeterminate

Velocity less than 0.5 fps, direction as indicated

1.29 Velocity at mid-depth in fps, direction as indicated

1.53 Velocity at water surface in fps, direction if different from mid-depth

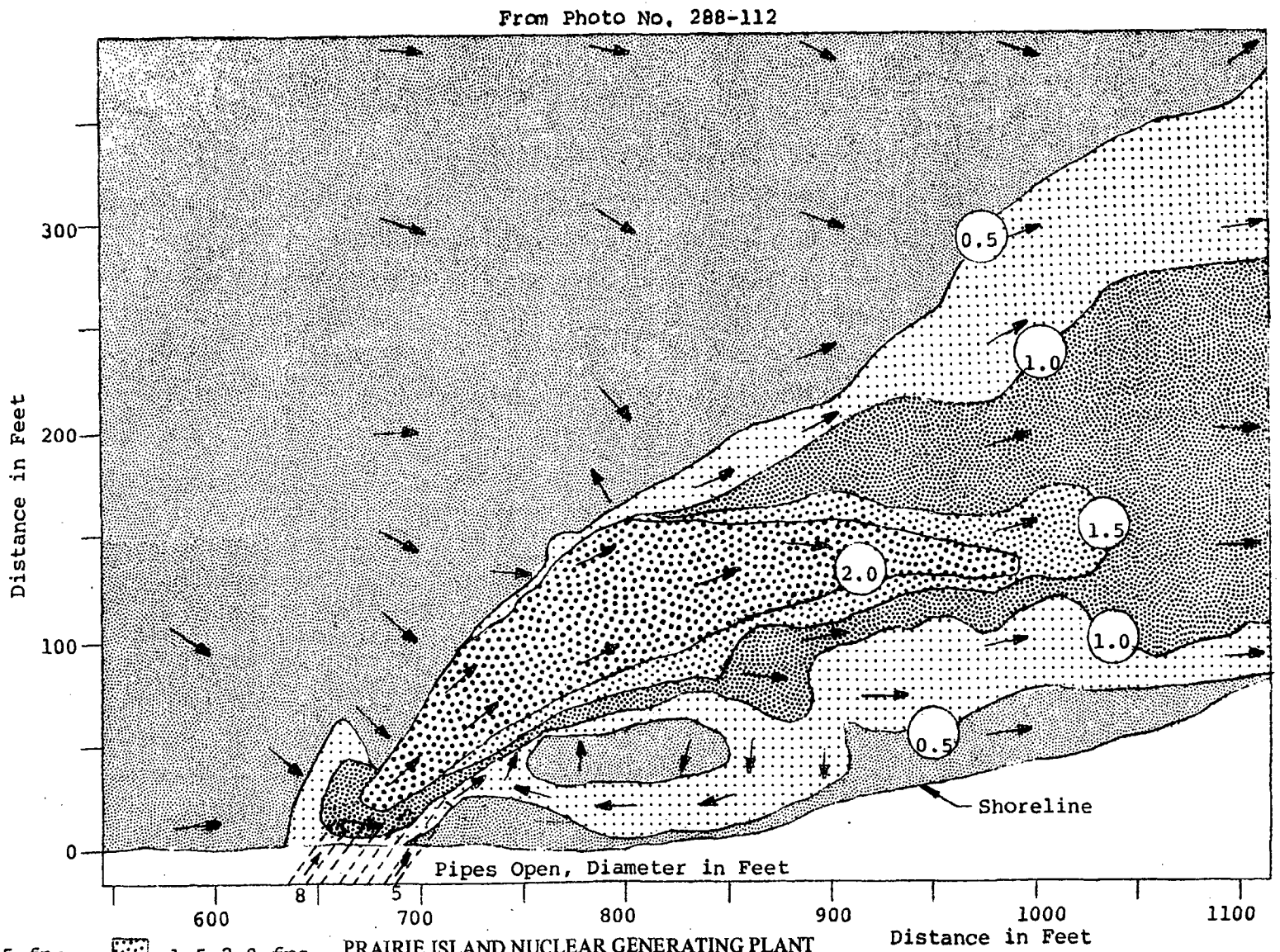
Maximum erosion depth after 8 hours of flow, elev. 651.9 ft

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities
Flow Condition 6, Model Scale 1:32
Q_T=3700 cfs, Q_D= 700 cfs, T.W.=674.4 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY
UNIVERSITY OF MINNESOTA

DRAWN DA	CHECKED	APPROVED
SCALE	DATE 6/12/80	NO. 288B510-11

Fig. 23

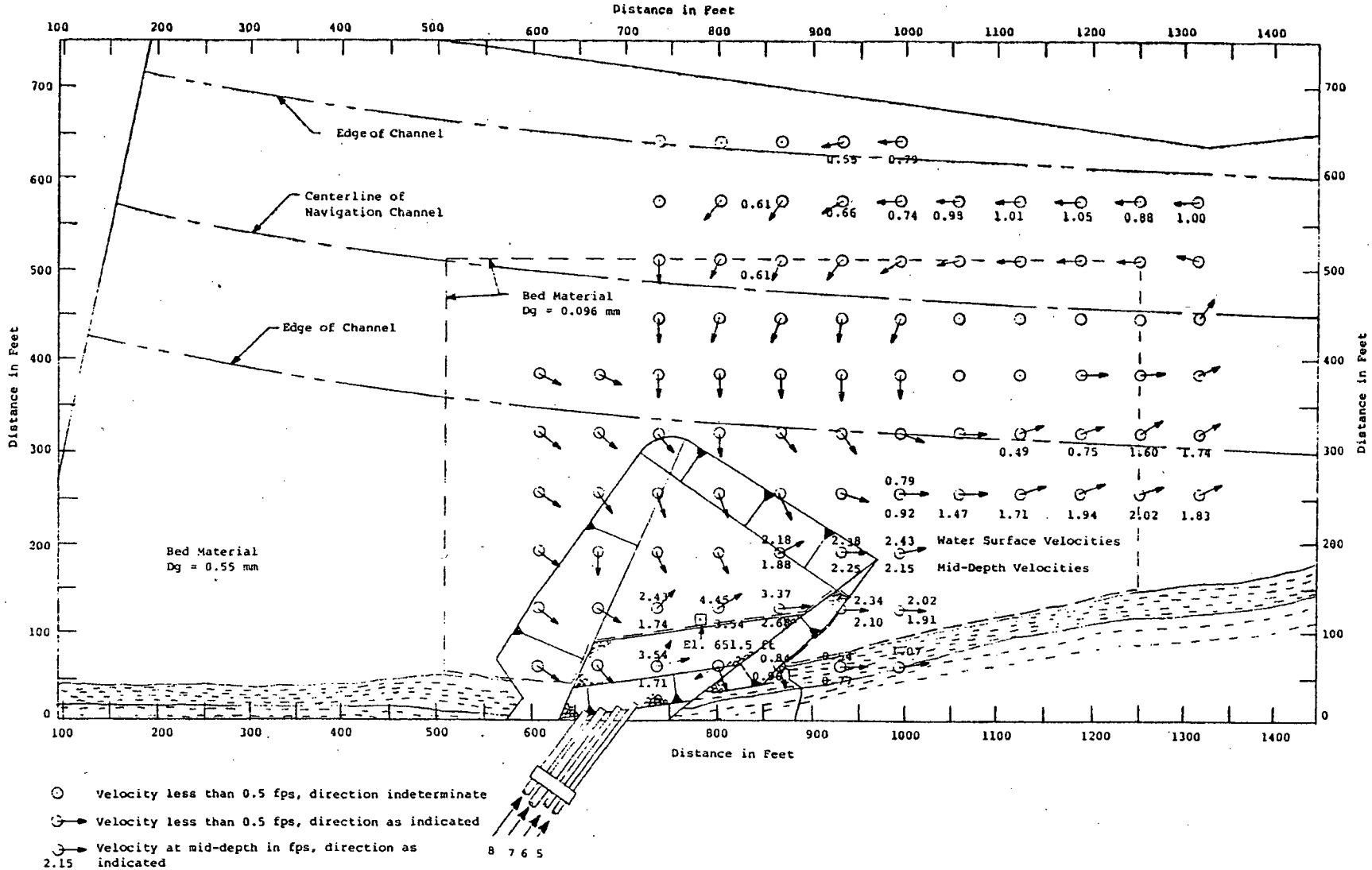


0-0.5 fps
0.5-1.0 fps
1.0-1.5 fps
1.5-2.0 fps
2.0-3.0 fps

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities at the Water Surface
Flow Condition 6, Model Scale 1:32
Q_T = 3700 cfs, Q_D = 700 cfs, T.W. ≈674.4 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 7/1/80	NO. 288A2320-9

Fig. 24



Velocity less than 0.5 fps, direction indeterminate

Velocity less than 0.5 fps, direction as indicated

2.15 Velocity at mid-depth in fps, direction as indicated

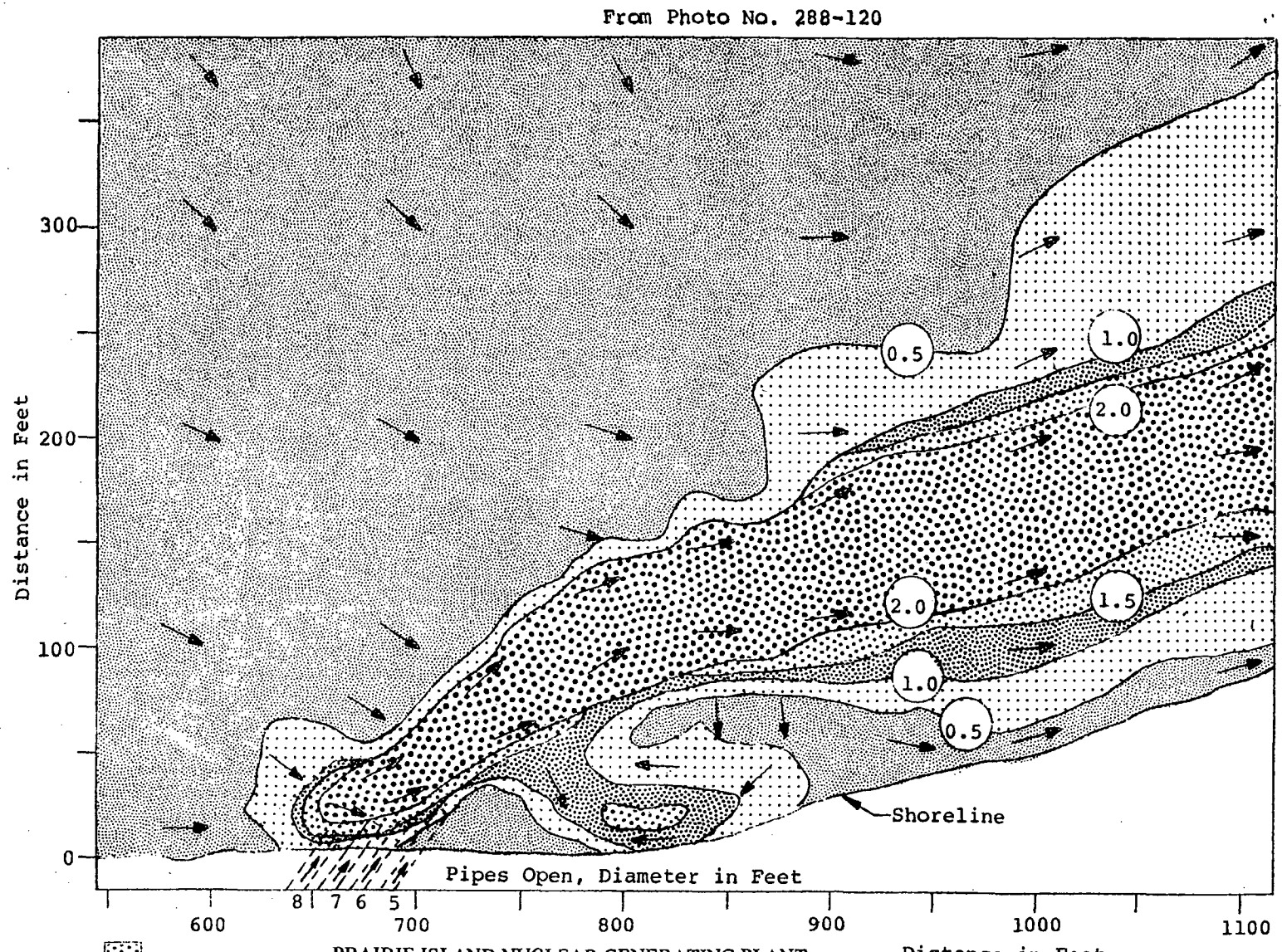
2.43 Velocity at water surface in fps, direction if different from mid-depth

Maximum erosion depth after 8 hours of flow, elev. 651.5 ft

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities
Flow Condition 7, Model Scale 1:32
Q_T=5000 cfs, Q_D=1390 cfs, T.W.=674.4 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 6/12/80	NO. 288B519-12

Fig. 25



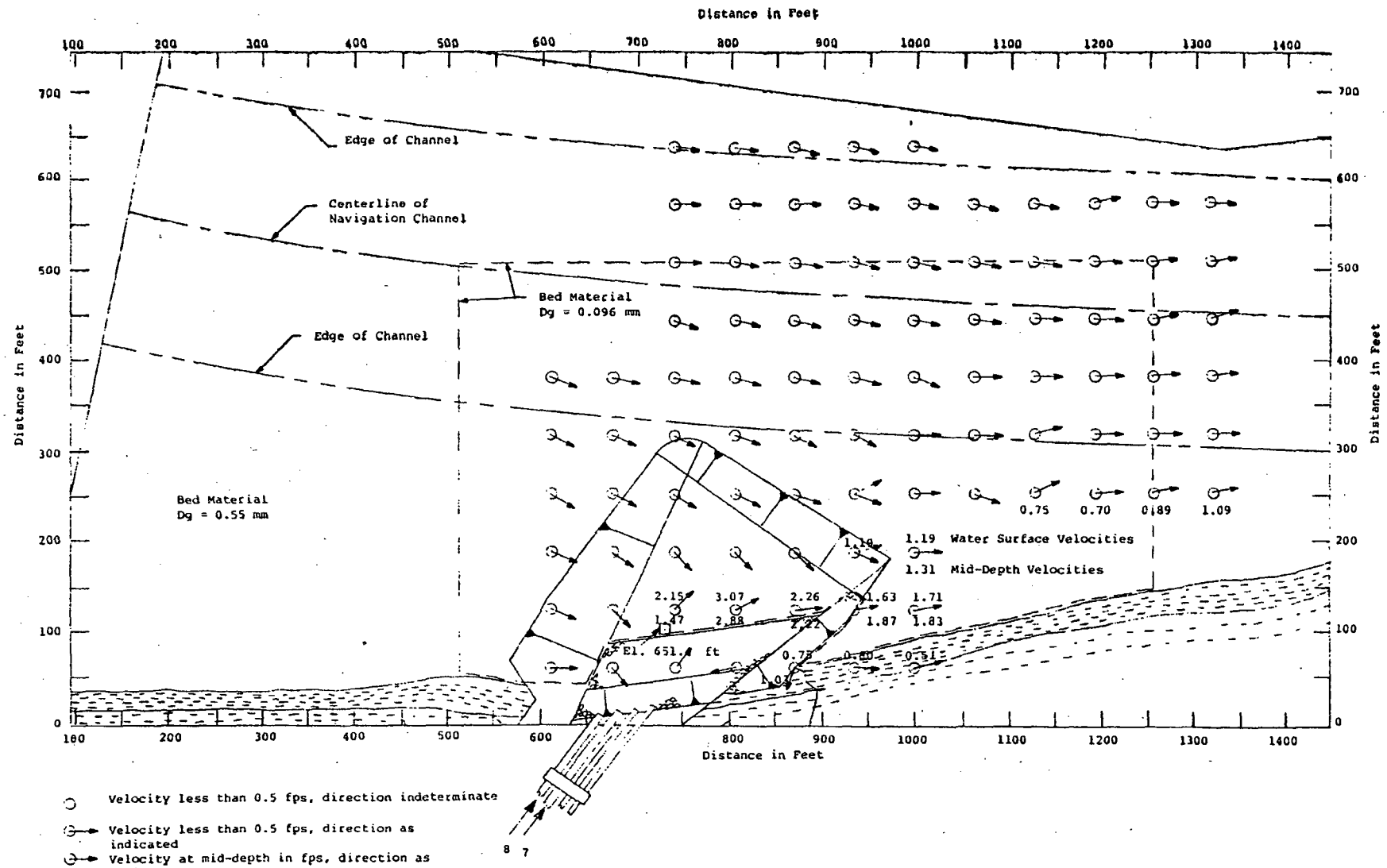
0-0.5 fps
0.5-1.0 fps
1.0-1.5 fps
1.5-2.0 fps
2.0-3.0 fps

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities at the Water Surface
Flow Condition 7, Model Scale 1:32
Q_T = 5000 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY
UNIVERSITY OF MINNESOTA

DRAWN DA	CHECKED	APPROVED
SCALE	DATE 7/1/80	NO. 288A2320-10

Fig. 26

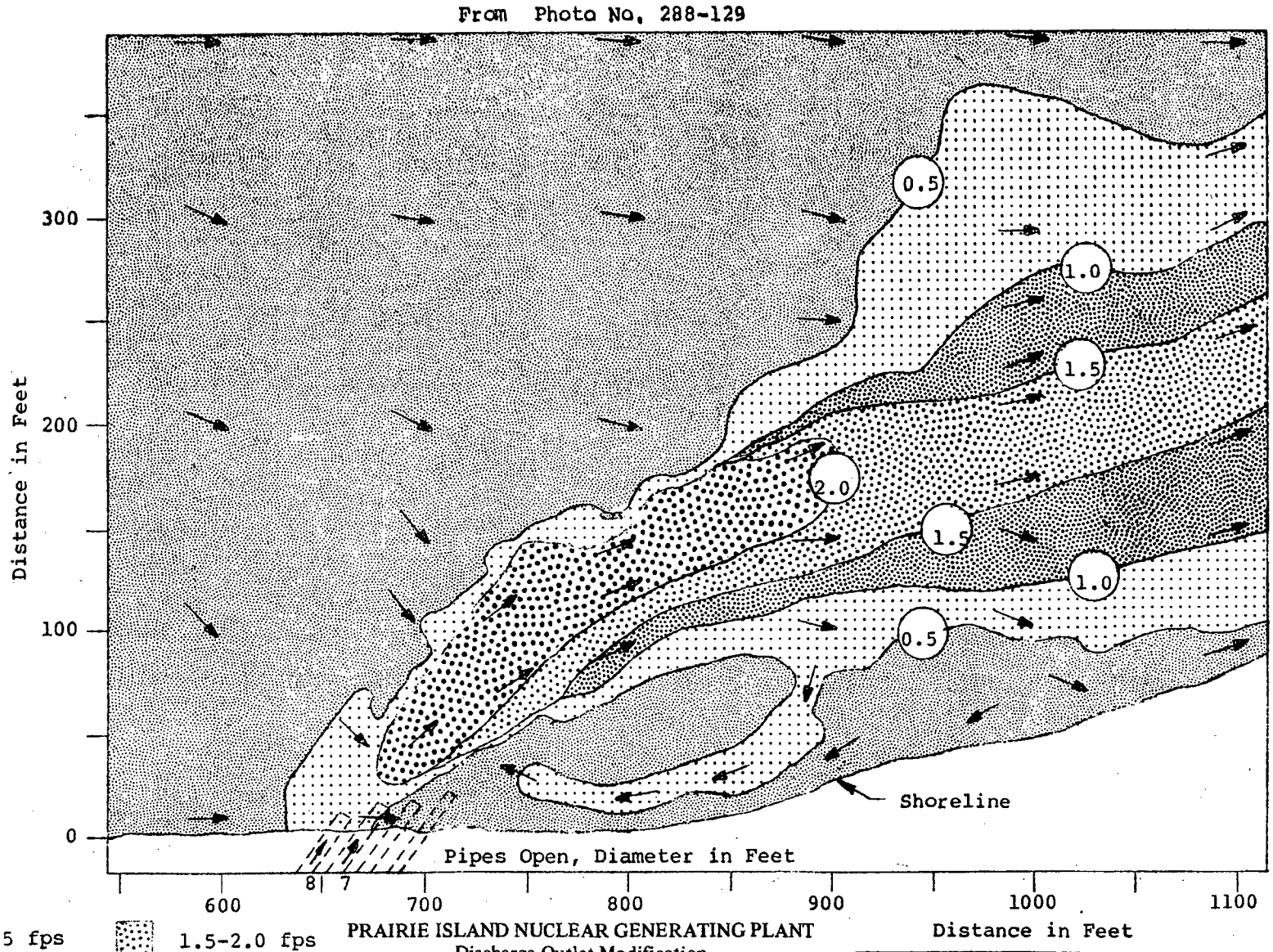


PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities
Flow Condition 8, Model Scale 1:32
Q_T=6400 cfs, Q_D=800 cfs, T.W.=674.3 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY
UNIVERSITY OF MINNESOTA

DRAWN DA	CHECKED	APPROVED
SCALE	DATE 6/12/80	NO. 288B510-11

Fig. 27

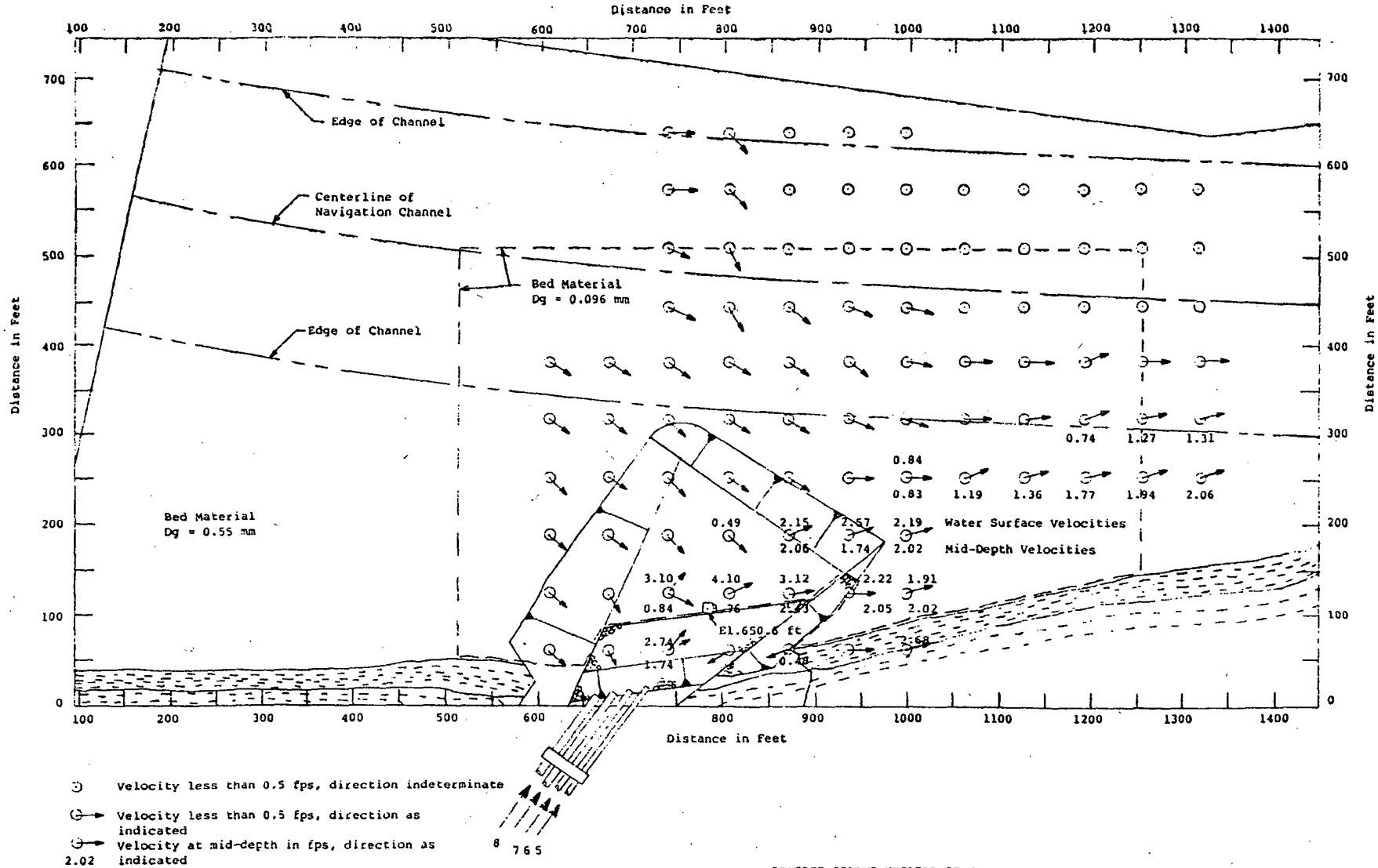


0-0.5 fps
0.5-1.0 fps
1.0-1.5 fps
1.5-2.0 fps
2.0-3.0 fps

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities at the Water Surface
Flow Condition 8, Model Scale 1:32
Q_T = 6400 cfs, Q_D = 800 cfs, T.W. 674.3 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN: DA	CHECKED	APPROVED
SCALE	DATE 7/1/80	NO. 288A2320-11

Fig. 28



Velocity less than 0.5 fps, direction indeterminate

Velocity less than 0.5 fps, direction as indicated

2.02 Velocity at mid-depth in fps, direction as indicated

2.19 Velocity at water surface in fps, direction if different from mid-depth

Maximum erosion depth after 8 hours of flow, elev. 650.6 ft

8 7 6 5

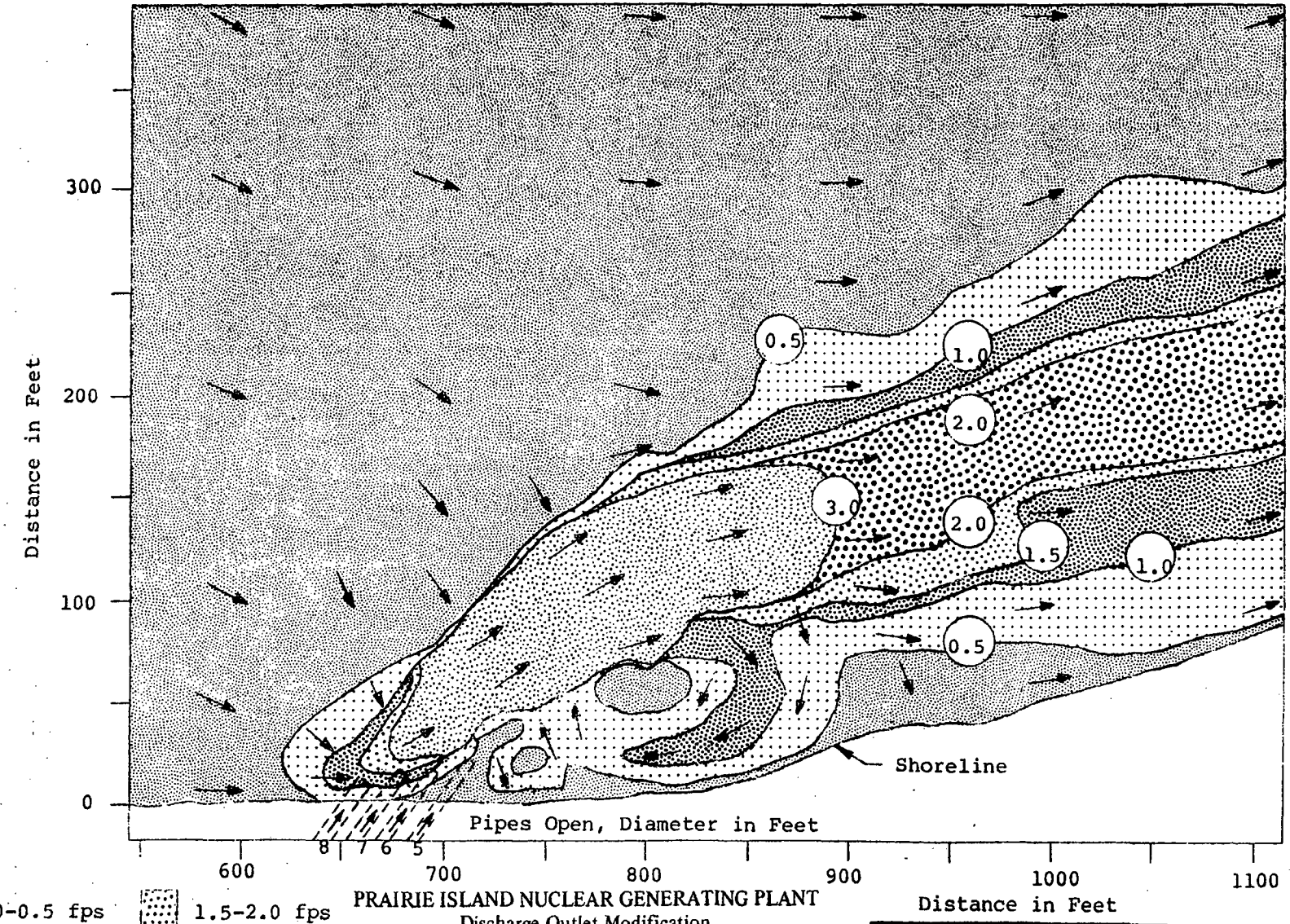
Pipes Open
Diameter in Feet

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities
Flow Condition 9, Model Scale 1:32
Q_T=7500 cfs, Q_D=1390 cfs, T.W.=674.2 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 6/12/80	NO. 2888510-14

Fig. 29

From Photo No. 288-137

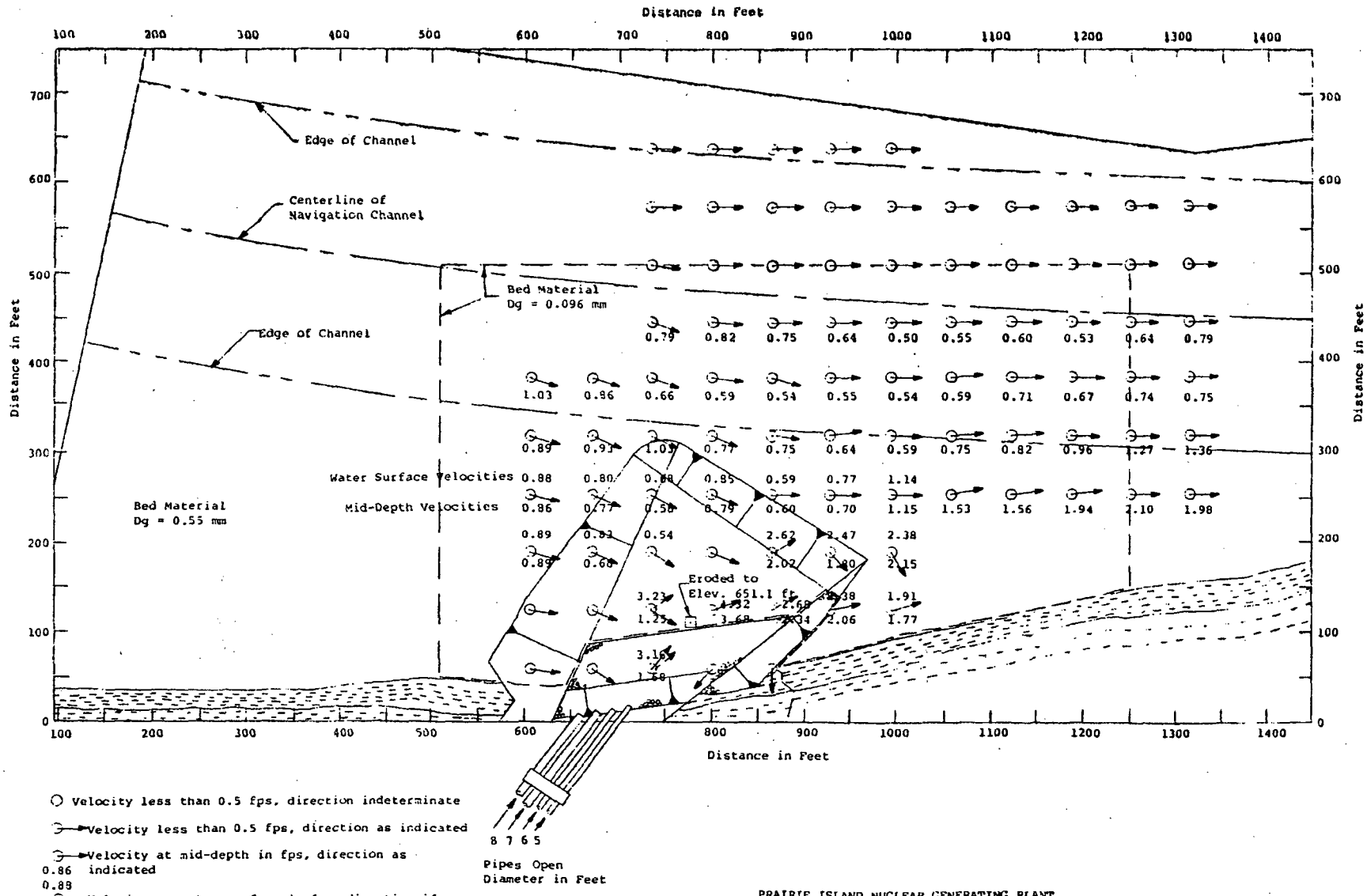


0-0.5 fps	1.5-2.0 fps	PRAIRIE ISLAND NUCLEAR GENERATING PLANT	
0.5-1.0 fps	2.0-3.0 fps	Discharge Outlet Modification	
1.0-1.5 fps	> 3.0 fps	Flow Pattern and Velocities at the Water Surface	
		Flow Condition 9, Model Scale 1:32	
		Q_T = 7500 cfs, Q_D = 1390 cfs, T.W. = 674.2 ft	

SAINT ANTHONY FALLS HYDRAULIC LABORATORY
UNIVERSITY OF MINNESOTA

DRAWN DA	CHECKED	APPROVED
SCALE	DATE 7/1/80	NO. 288A2320-12

Fig. 30



○ Velocity less than 0.5 fps, direction indeterminate

Velocity less than 0.5 fps, direction as indicated

0.86 Velocity at mid-depth in fps, direction as indicated

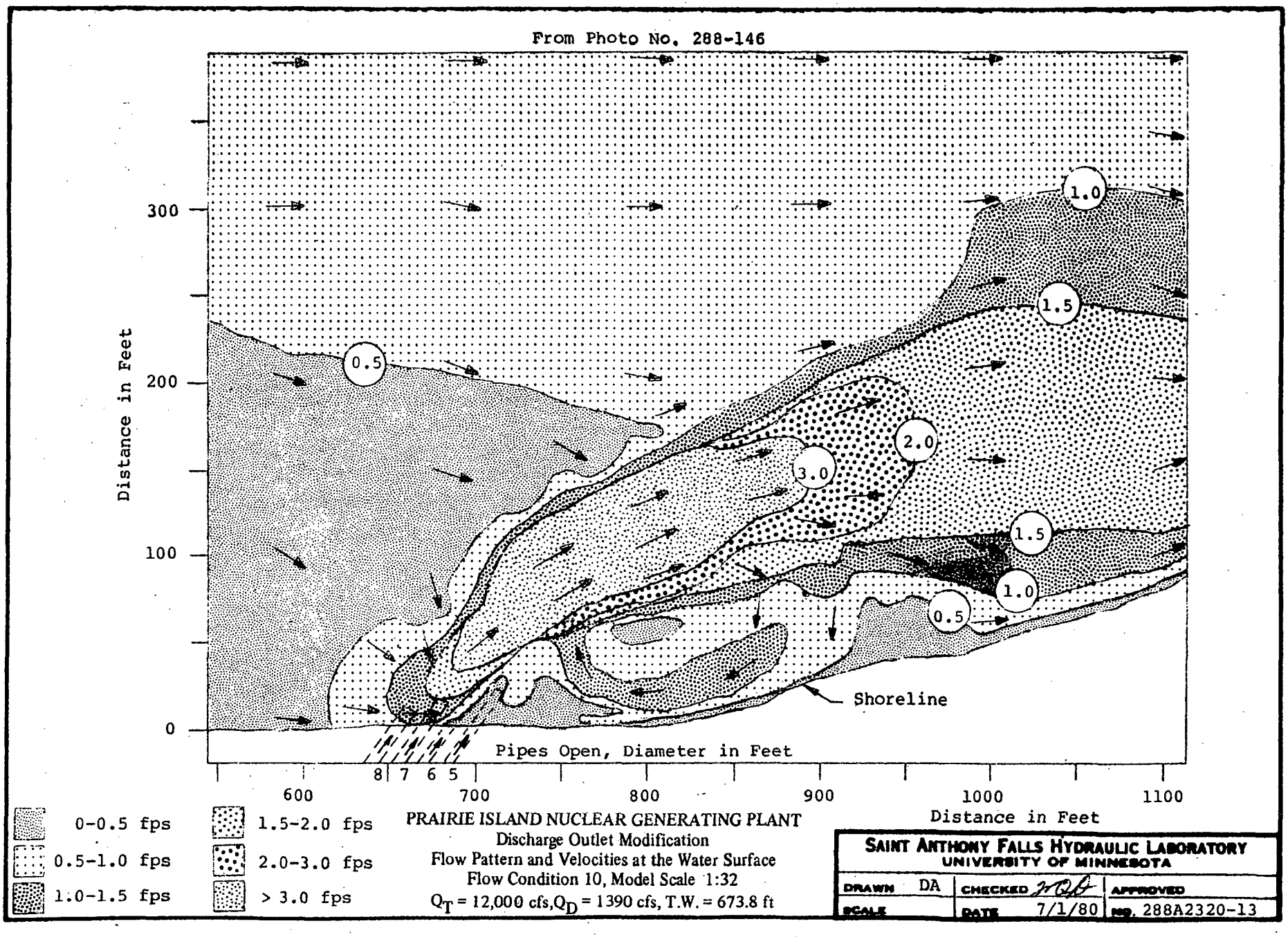
0.89 Velocity at water surface in fps, direction if different from mid-depth

Maximum erosion depth after 8 hours of flow, elev. 651.1 ft

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities
Flow Condition 10, Model Scale 1:32
Q_T=12000 cfs, Q_D=1390 cfs, T.W.=673.8 ft.

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 5/14/80	NO. 288B510-7

Fig. 31



PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Discharge Outlet Modification
Flow Pattern and Velocities at the Water Surface
Flow Condition 10, Model Scale 1:32
Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft

SAINT ANTHONY FALLS HYDRAULIC LABORATORY UNIVERSITY OF MINNESOTA		
DRAWN DA	CHECKED	APPROVED
SCALE	DATE 7/1/80	NO. 288A2320-13

Fig. 32

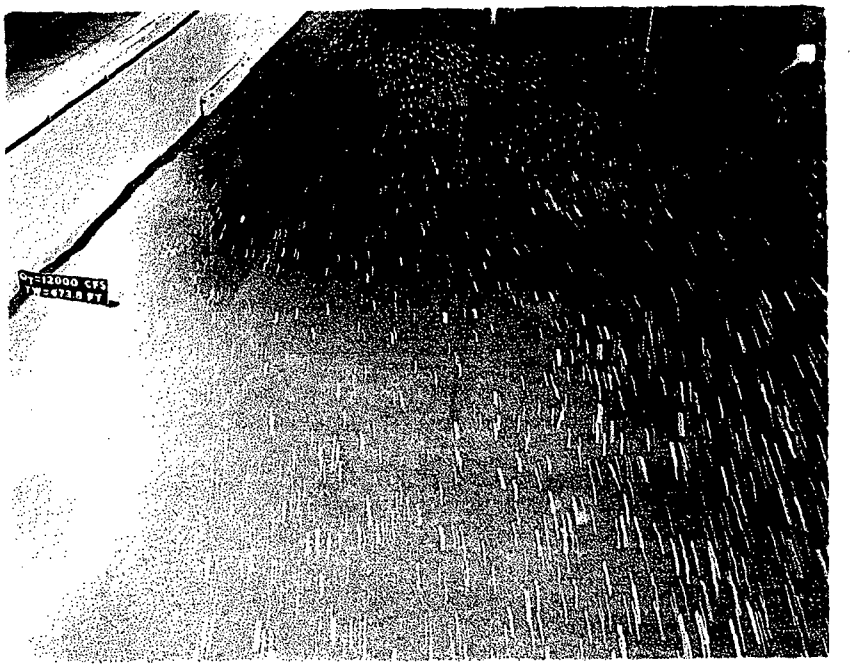


Photo 1 - Original River Bed. Flow Condition 1, Q_T = 12,000 cfs, Q_D = 0 cfs, T.W. = 673.8 ft; flow pattern.

Photo 2 - Original River Bed. Flow Condition 1, Q_T = 12,000 cfs, Q_D = 0 cfs, T.W. = 673.8 ft; flow pattern.

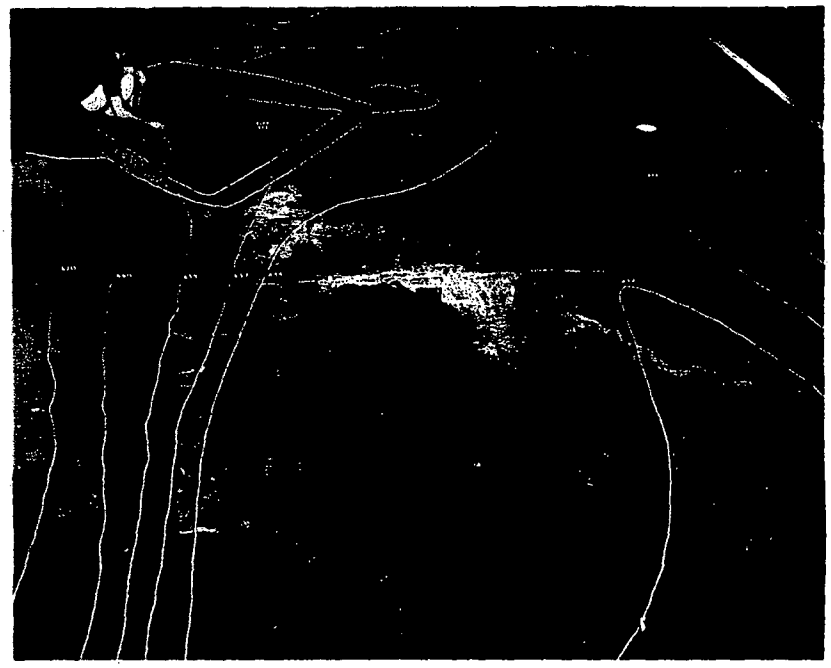


Photo 3 - Discharge Outlet Modification.
Model layout with original contours.

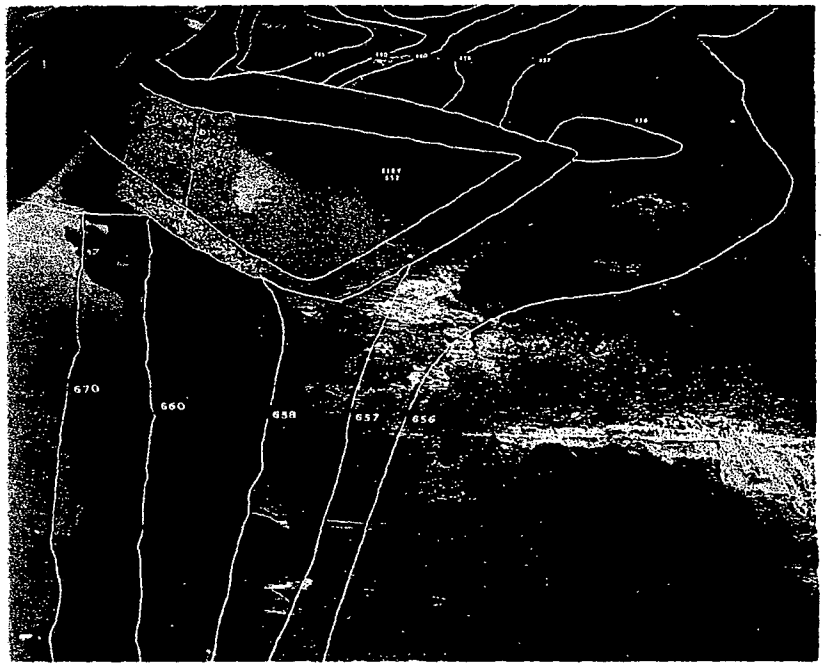


Photo 4 - Discharge Outlet Modification.
Model layout with original contours.

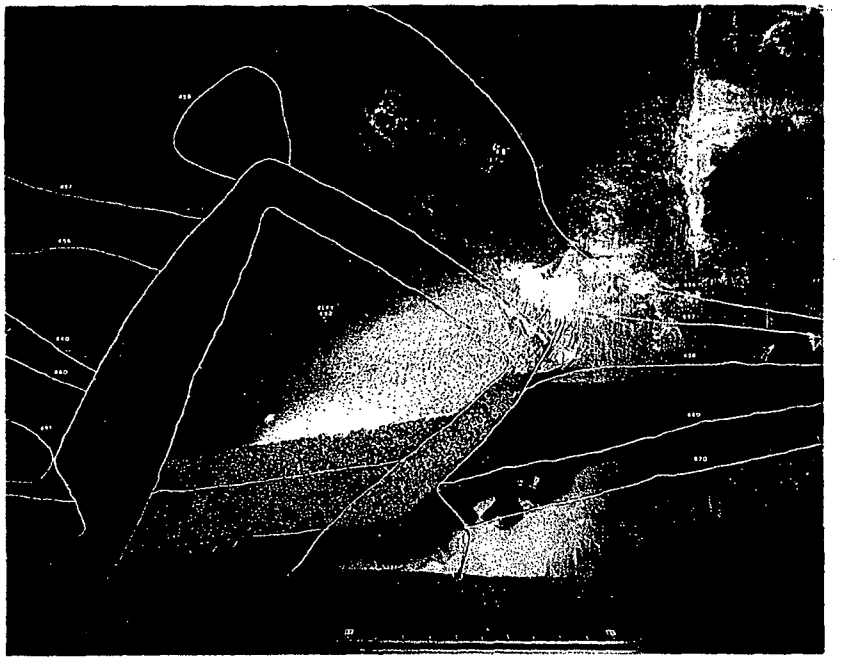


Photo 5 - Discharge Outlet Modification.
Model layout with original contours.

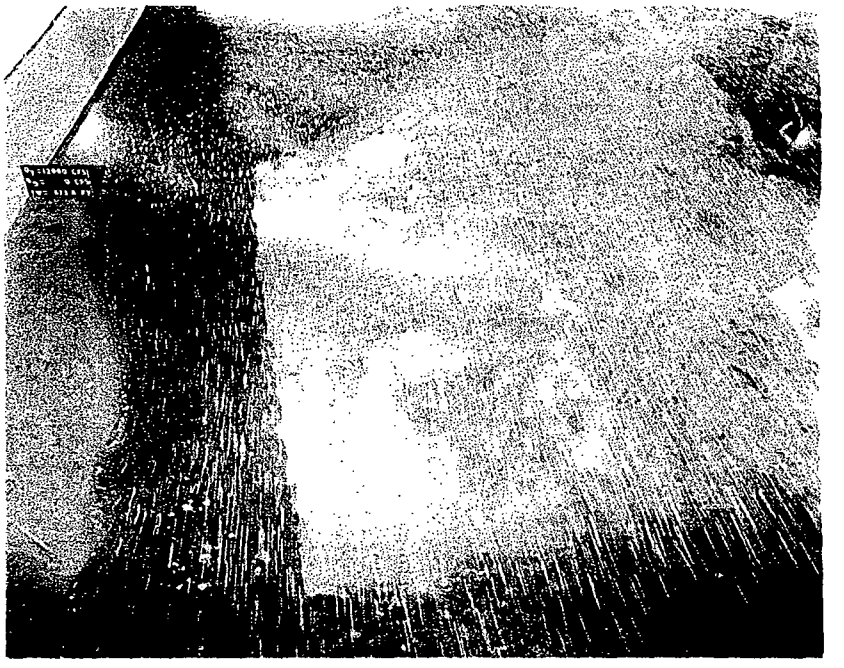


Photo 6 - Discharge Outlet Modification. Flow Condition 1, Q_T = 12,000 cfs, Q_D = 0 cfs, T.W. = 673.8 ft; flow pattern.

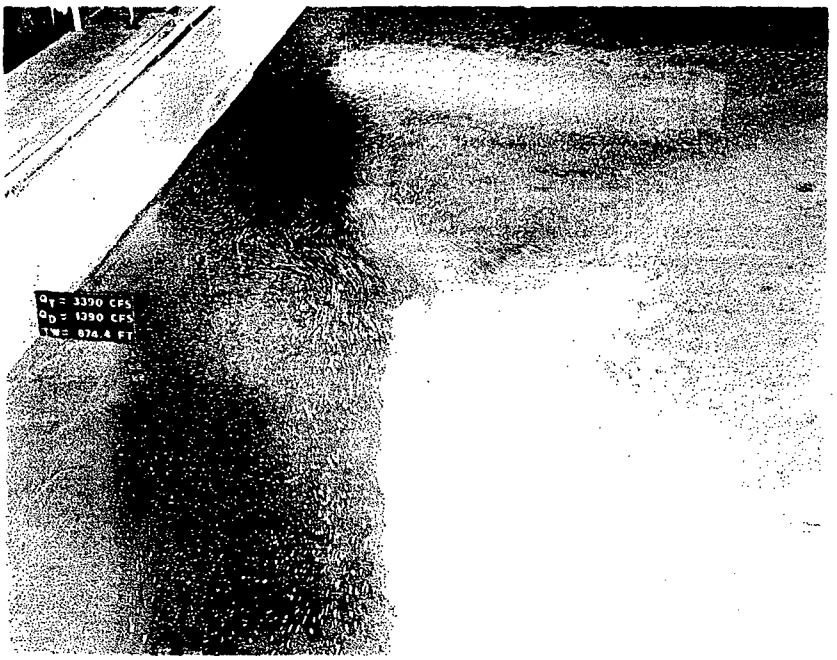


Photo 7 - Discharge Outlet Modification. Flow Condition 2, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8, 7, 6 & 5; flow pattern.

Photo 8 - Discharge Outlet Modification. Flow Condition 2, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8, 7, 6 & 5; flow pattern.

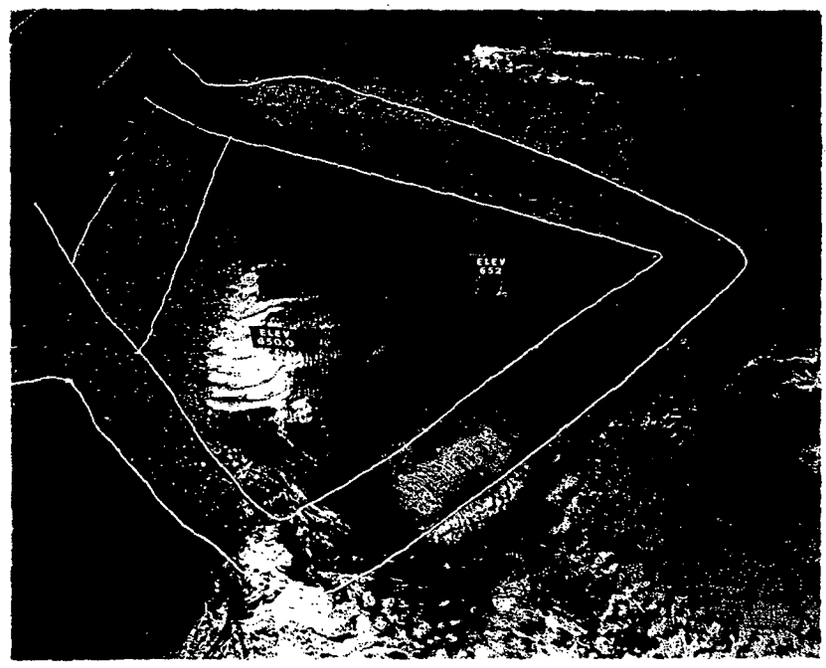


Photo 9 - Discharge Outlet Modification. Flow Condition 2, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8, 7, 6 & 5; Local scour after 8 hours of flow.

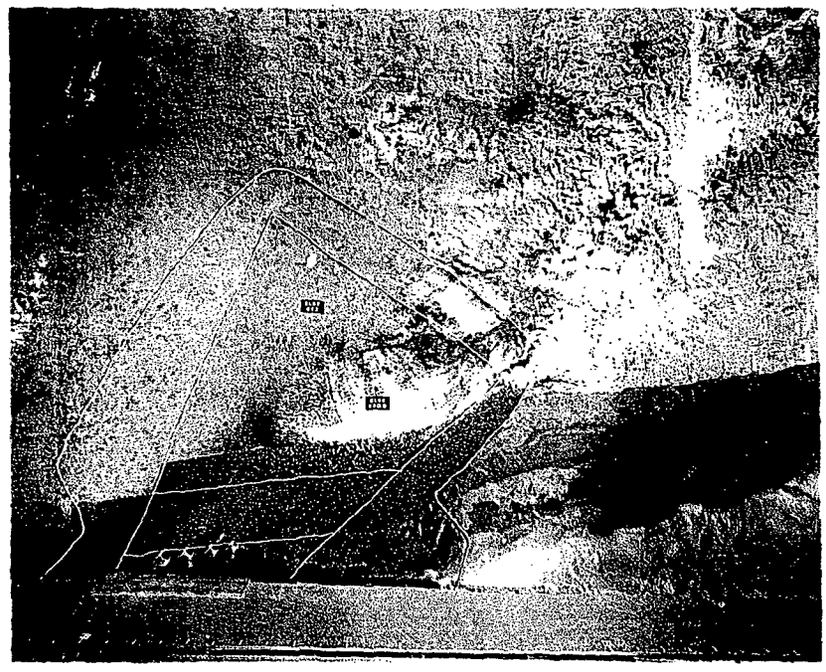


Photo 10 - Discharge Outlet Modification. Flow Condition 2, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8, 7, 6 & 5; local scour after 8 hours of flow.

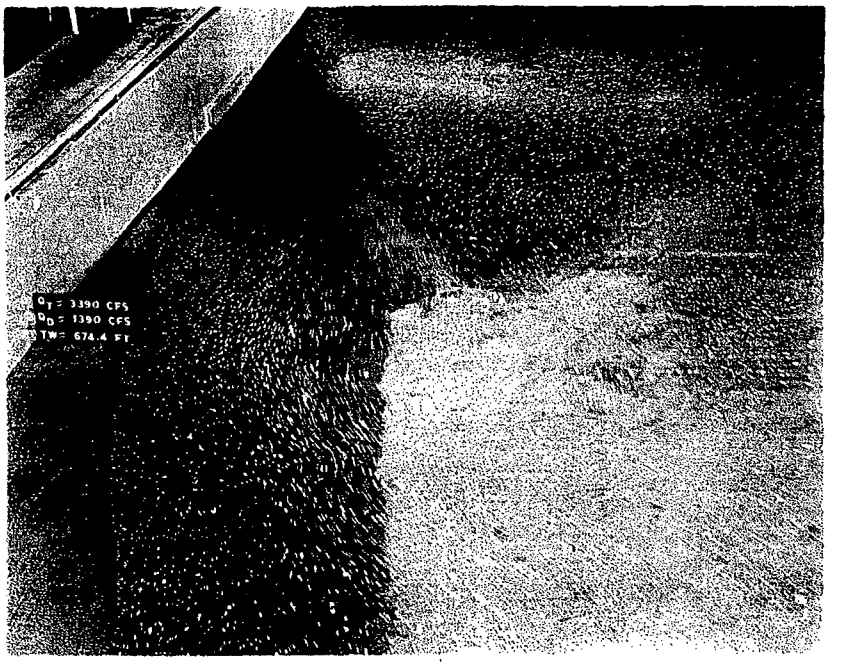


Photo 11 - Discharge Outlet Modification. Flow Condition 3, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8, 7, 6 & 5; flow pattern.

Photo 12 - Discharge Outlet Modification. Flow Condition 3, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8, 7, 6 & 5; flow pattern.

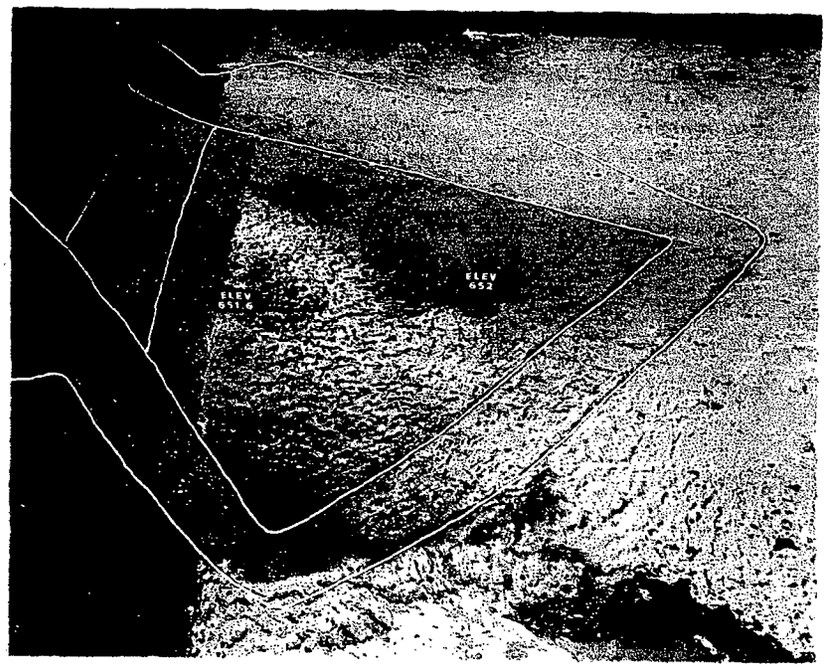


Photo 13 - Discharge Outlet Modification. Flow Condition 3, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8, 7, 6 & 5; local scour after 8 hours of flow.

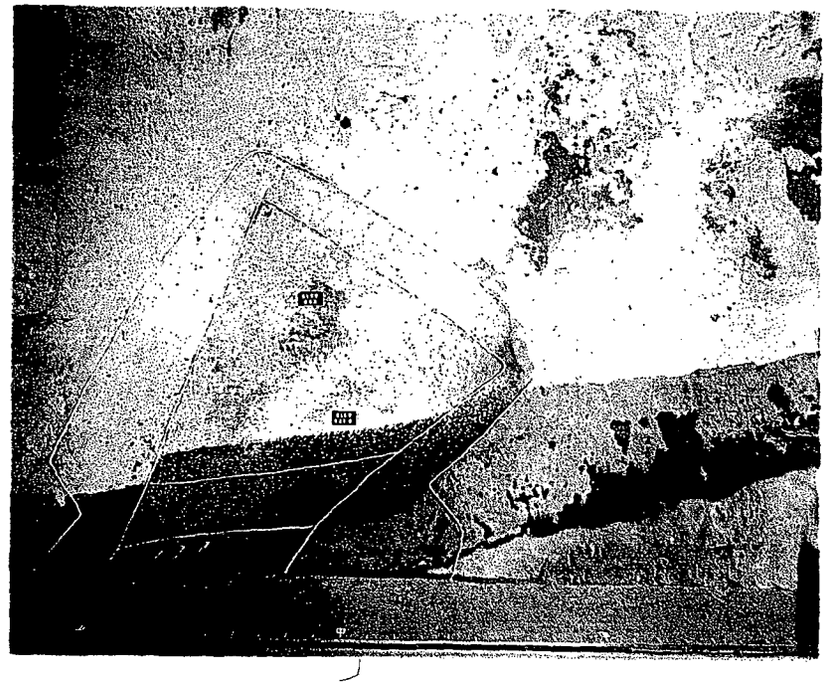


Photo 14 - Discharge Outlet Modification. Flow Condition 3, Q_T = 3390 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8, 7, 6 & 5; local scour after 8 hours of flow.

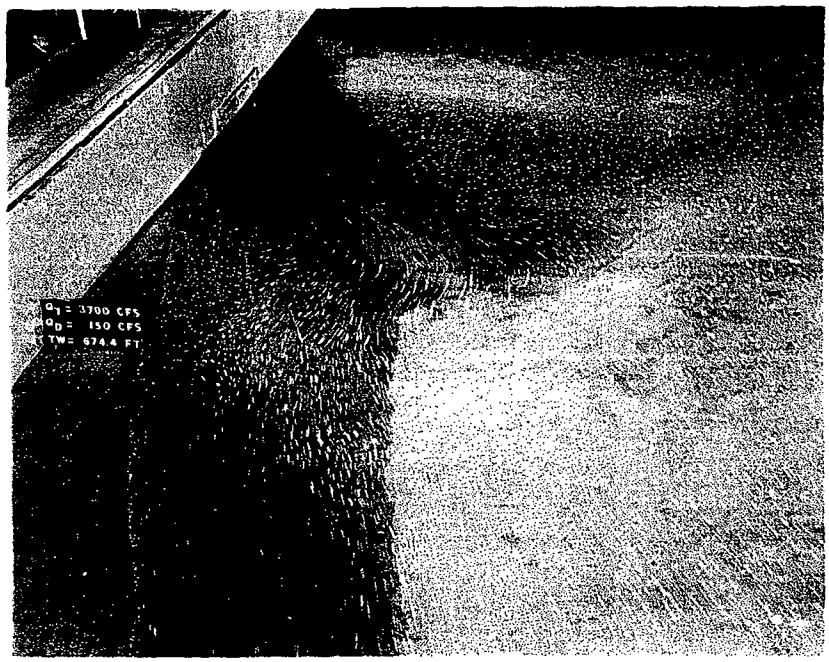


Photo 15 - Discharge Outlet Modification. Flow Condition 4, Q_T = 3700 cfs, Q_D = 150 cfs, T.W. = 674.4 ft, Pipe Open = 5; flow pattern.

Photo 16 - Discharge Outlet Modification. Flow Condition 4, Q_T = 3700 cfs, Q_D = 150 cfs, T.W. = 674.4 ft, Pipe Open = 5; flow pattern.

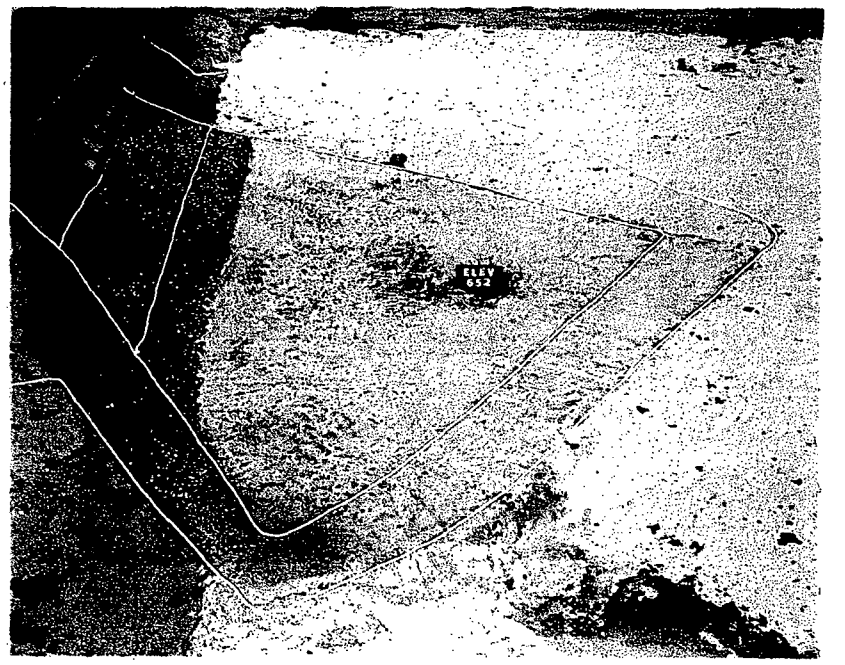


Photo 17 - Discharge Outlet Modification. Flow Condition 4, Q_T = 3700 cfs, Q_D = 150 cfs, T.W. = 674.4 ft, Pipe Open = 5; local scour after 8 hours of flow.

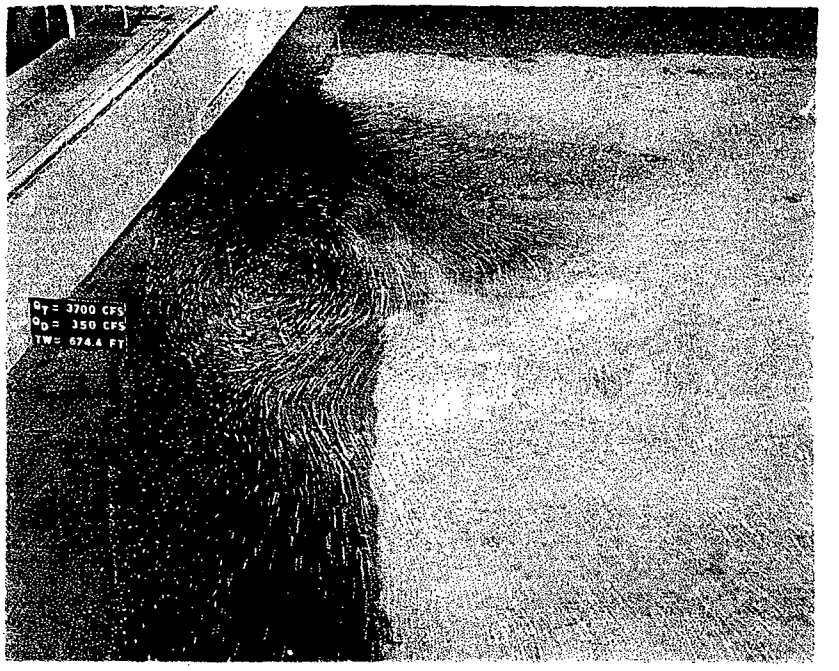


Photo 18 - Discharge Outlet Modification. Flow Condition 5, Q_T = 3700 cfs, Q_D = 350 cfs, T.W. = 674.4 ft, Pipe Open = 7; flow pattern.

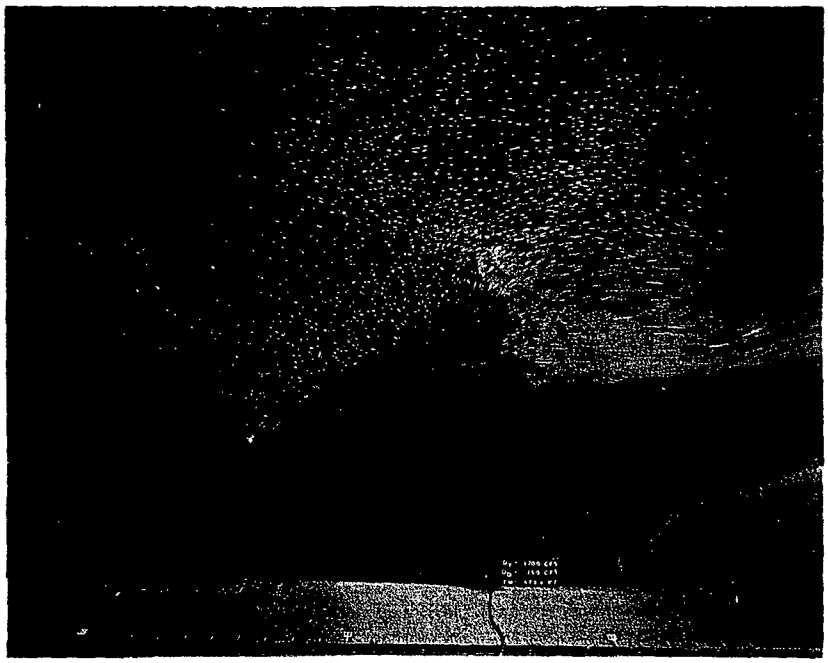


Photo 19 - Discharge Outlet Modification. Flow Condition 5, Q_T = 3700 cfs, Q_D = 350 cfs, T.W. = 674.4 ft, Pipe Open = 7; flow pattern.

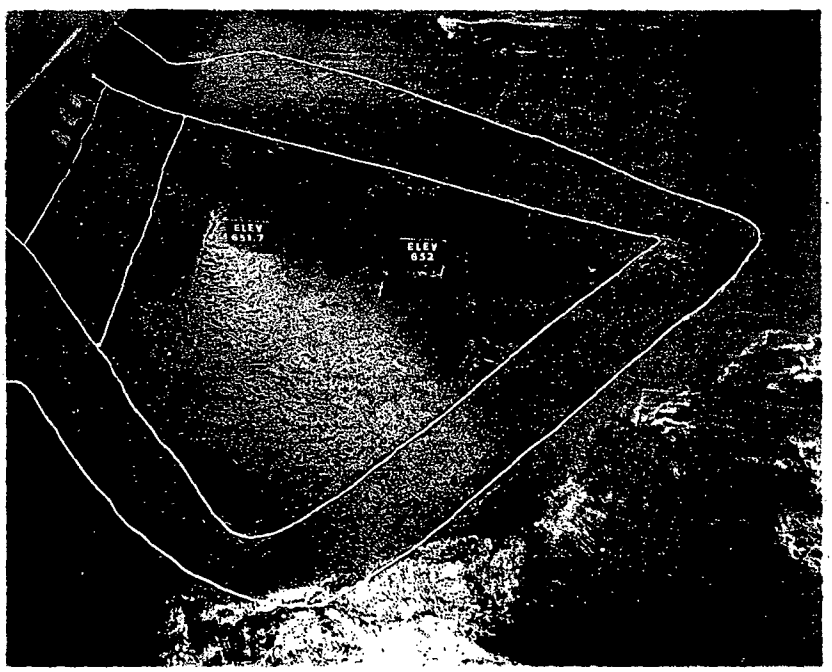


Photo 20 - Discharge Outlet Modification. Flow Condition 5, Q_T = 3700 cfs, Q_D = 350 cfs, T.W. = 674.4 ft, Pipe Open = 7; local scour after 8 hours of flow.

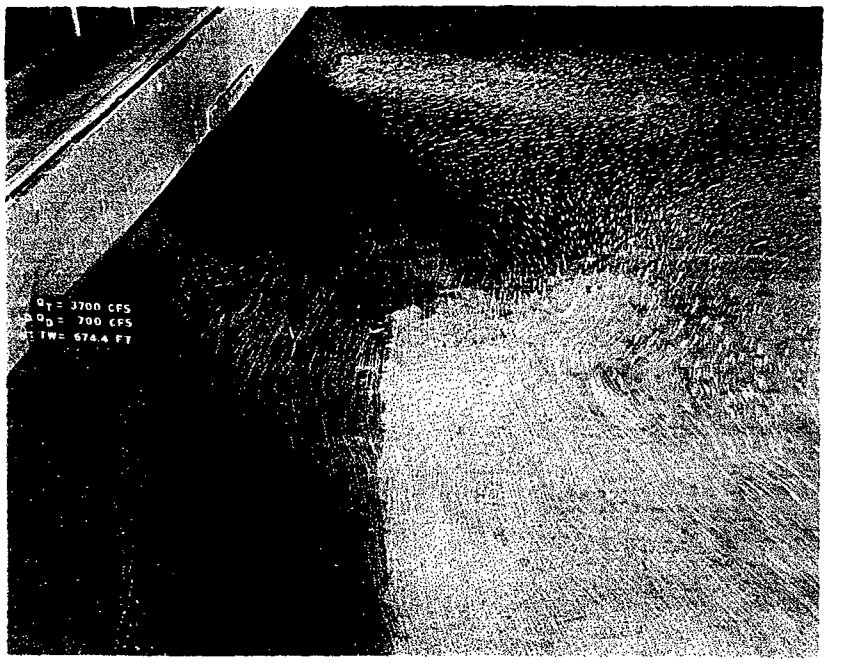


Photo 21 - Discharge Outlet Modification. Flow Condition 6, Q_T = 3700 cfs, Q_D = 700 cfs, T.W. = 674.4 ft, Pipes Open = 8 & 5; flow pattern.

Photo 22 - Discharge Outlet Modification. Flow Condition 6, Q_T = 3700 cfs, Q_D = 700 cfs, T.W. = 674.4 ft, Pipes Open = 8 & 5; flow pattern.

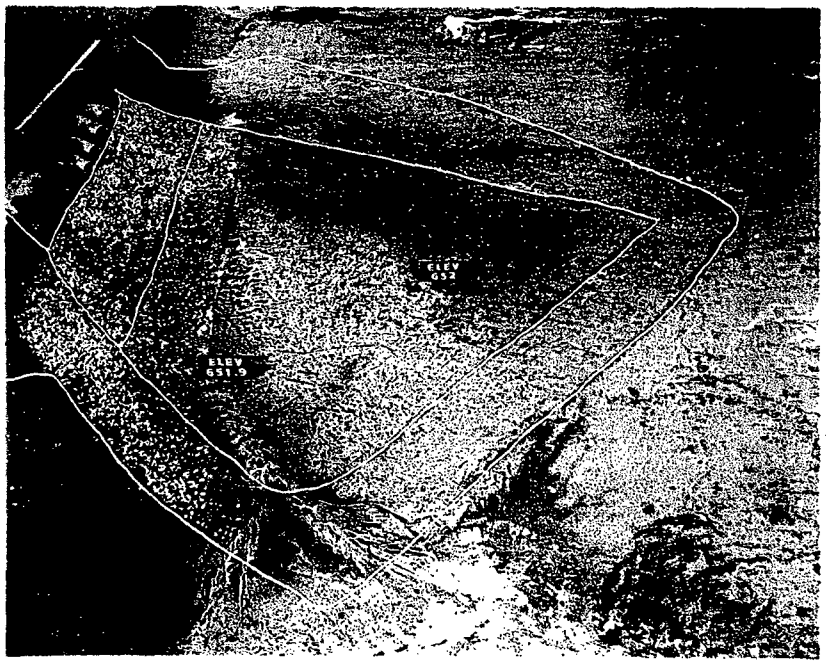


Photo 23 - Discharge Outlet Modification. Flow Condition 6, Q_T = 3700 cfs, Q_D = 700 cfs, T.W. = 674.4 ft, Pipes Open = 8 & 5; local scour after 8 hours of flow.

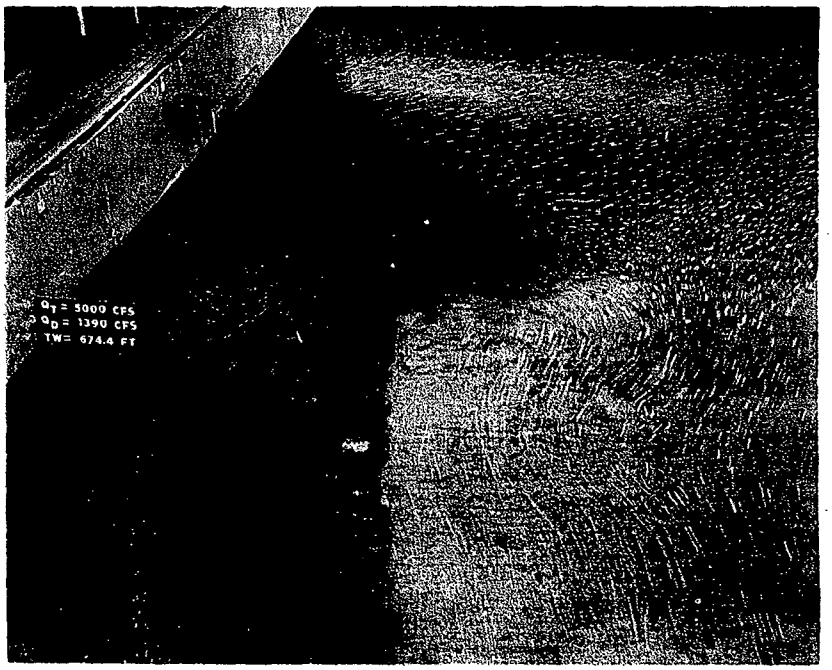


Photo 24 - Discharge Outlet Modification. Flow Condition 7, Q_T = 5000 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8, 7, 6 & 5; flow pattern.

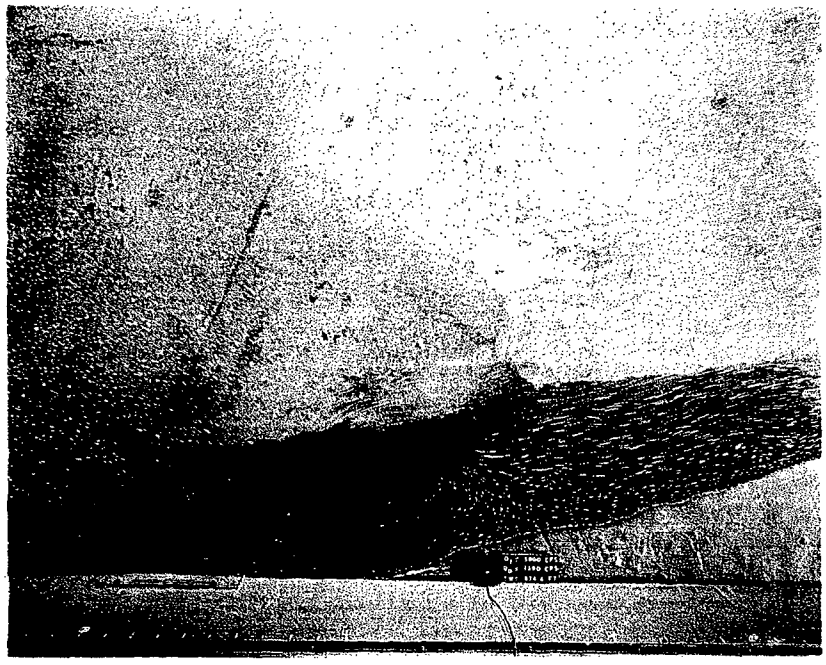


Photo 25 - Discharge Outlet Modification. Flow Condition 7, Q_T = 5000 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8, 7, 6 & 5; flow pattern.

Photo 26 - Discharge Outlet Modification. Flow Condition 7, Q_T = 5000 cfs, Q_D = 1390 cfs, T.W. = 674.4 ft, Pipes Open = 8, 7, 6 & 5; local scour after 8 hours of flow.

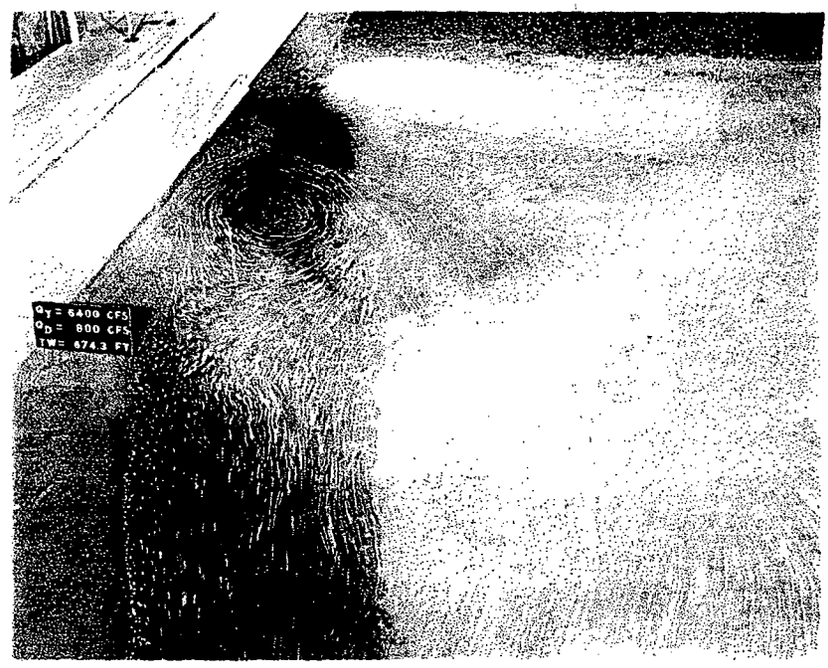


Photo 27 - Discharge Outlet Modification. Flow Condition 8, Q_T = 6400 cfs, Q_D = 800 cfs, T.W. = 674.3 ft, Pipes Open = 8 & 7; flow pattern.

Photo 28 - Discharge Outlet Modification. Flow Condition 8, Q_T = 6400 cfs, Q_D = 800 cfs, T.W. = 674.3 ft, Pipes Open = 8 & 7; flow pattern.

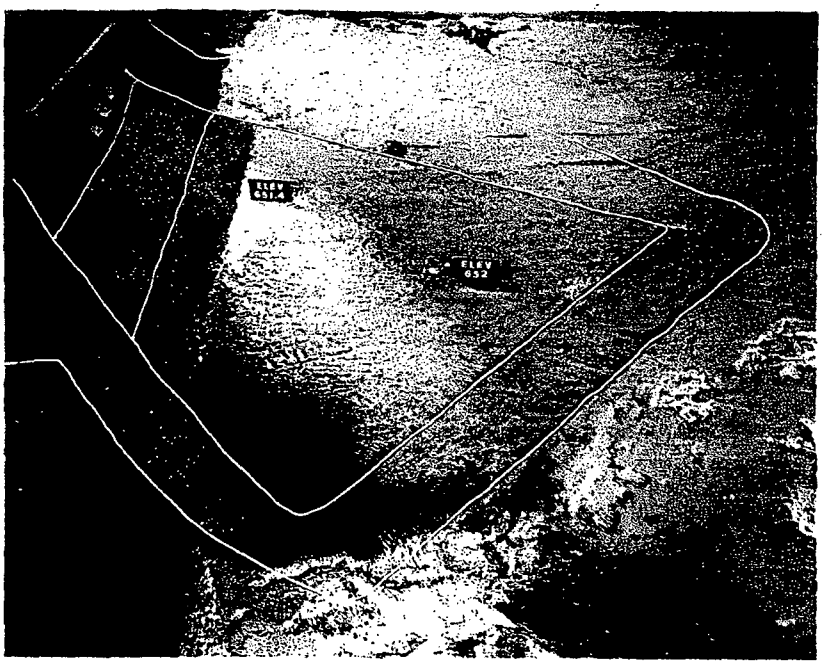


Photo 29 - Discharge Outlet Modification. Flow Condition 8, Q_T = 6400 cfs, Q_D = 800 cfs, T.W. = 674.3 ft, Pipes Open = 8 & 7; local scour after 8 hours of flow.

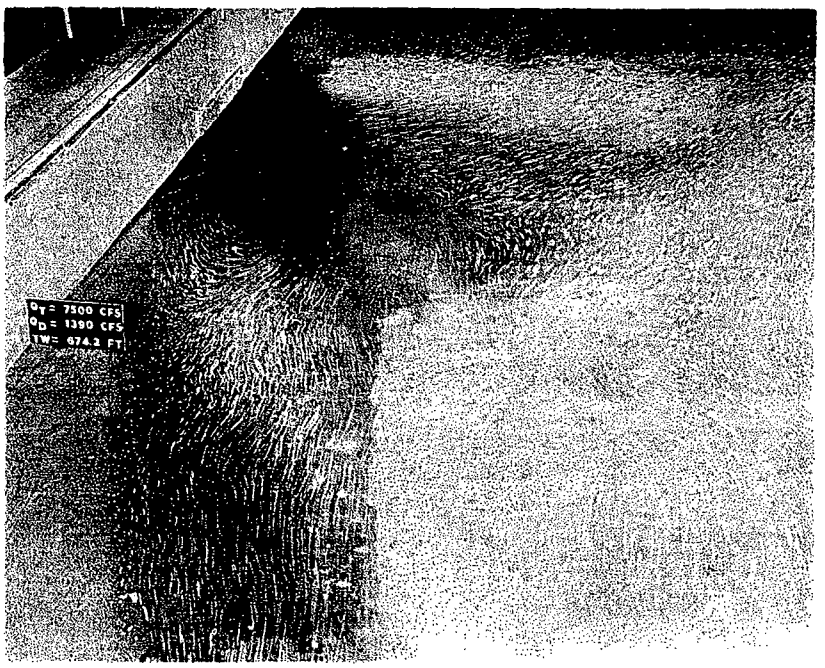


Photo 30 - Discharge Outlet Modification. Flow Condition 9, Q_T = 7500 cfs, Q_D = 1390 cfs, T.W. = 674.2 ft, Pipes Open = 8, 7, 6 & 5; flow pattern.

Photo 31 - Discharge Outlet Modification. Flow Condition 9, Q_T = 7500 cfs, Q_D = 1390 cfs, T.W. = 674.2 ft, Pipes Open = 8, 7, 6 & 5; flow pattern.

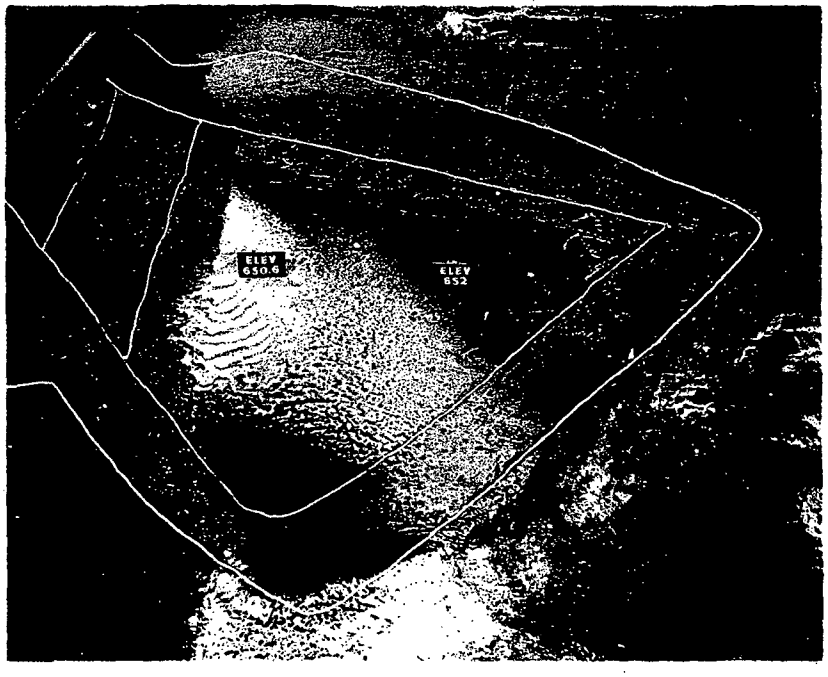


Photo 32 - Discharge Outlet Modification. Flow Condition 9, Q_T = 7500 cfs, Q_D = 1390 cfs, T.W. = 674.2 ft, Pipes Open = 8, 7, 6 & 5; local scour after 8 hours of flow.

Photo 33 - Discharge Outlet Modification. Flow Condition 10, Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft, Pipes Open = 8, 7, 6 & 5; flow pattern.

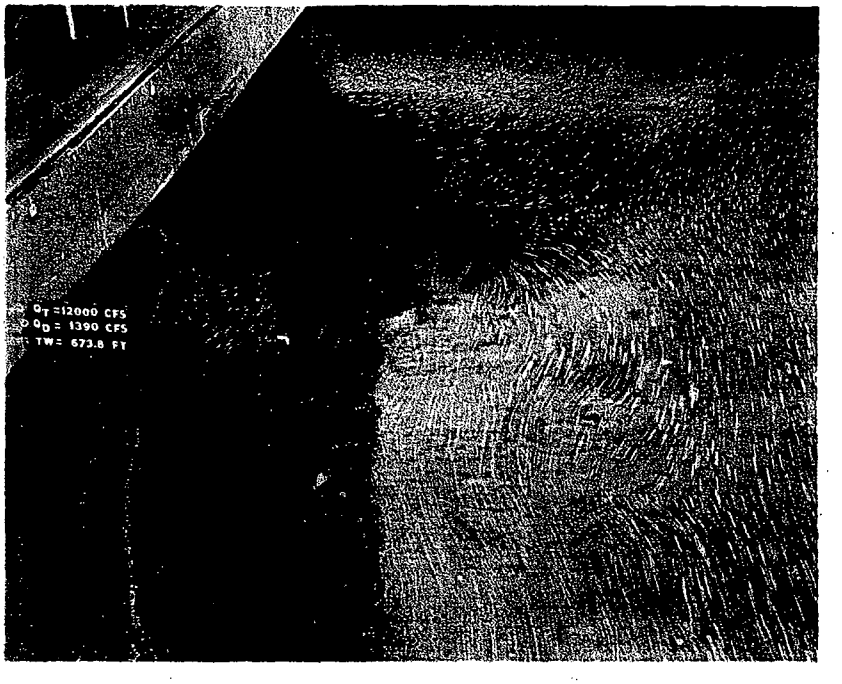


Photo 34 - Discharge Outlet Modification. Flow Condition 10, Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft, Pipes Open = 8, 7, 6 & 5; flow pattern.

Photo 35 - Discharge Outlet Modification. Flow Condition 10, Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft, Pipes Open = 8, 7, 6 & 5; flow pattern.

Photo 36 - Discharge Outlet Modification. Flow Condition 10, Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft, Pipes Open = 8, 7, 6 & 5; local scour after 8 hours of flow.

Photo 37 - Discharge Outlet Modification. Flow Condition 10, Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft, Pipes Open = 8, 7, 6 & 5; local scour after 8 hours of flow.

Photo 38 - Discharge Outlet Modification. Flow Condition 10, Q_T = 12,000 cfs, Q_D = 1390 cfs, T.W. = 673.8 ft, Pipes Open = 8, 7, 6 & 5; local scour after 8 hours of flow.

FACT SHEET
POOL 3 UPPER MISSISSIPPI RIVER
WATER LEVEL MANAGEMENT

Navigation and Ecosystem Sustainability Program (NESP)
U.S. Army Corps of Engineers, St. Paul District

November 2007

TABLE OF CONTENTS

1. LOCATION

2. SIGNIFICANT RESOURCES

3. PROBLEM IDENTIFICATION

4. PROJECT GOALS AND OBJECTIVES

5. PROPOSED PROJECT

6. PROJECT MONITORING

7. IMPLEMENTATION CONSIDERATIONS

8. FINANCIAL DATA

9. POINT OF CONTACT

FACT SHEET
POOL 3 MISSISSIPPI RIVER
WATER LEVEL MANAGEMENT

Navigation and Ecosystem Sustainability Program (NESP)
U.S. Army Corps of Engineers, St. Paul District

Figure 1. Lock and Dam 3 and Pool 3 looking upriver.

1. LOCATION: Navigation Pool 3 is formed by Lock and Dam 3, located at Upper Mississippi River (UMR) mile 797, about 41 miles downriver from St. Paul, Minnesota, and 6 miles upriver from Red Wing, Minnesota (Figure 1). Pool 3 extends 18.3 miles upstream to Lock and Dam 2 at Hastings, Minnesota, and approximately 24.5 miles up the St. Croix River, which is the only major tributary entering the pool. Pool 3 has 17,950 acres of water area. Lock and Dam 3 is in Goodhue County, Minnesota, and Pierce County, Wisconsin.

2. SIGNIFICANT EXISTING RESOURCES: Significant existing resources in the study area include natural and cultural resources that are recognized as significant by institutions and the public. Significant infrastructure features in the project area include the following:

- Lock and Dam 3, the lock, movable dam, embankments
- Navigation channel, channel training structures and navigation aids

- Prairie Island Nuclear Power Plant
- Allen S. King Power Plant (on the St. Croix River)
- Prairie Island Indian Community
- Prairie Island Resort, Casino, and Marina

Significant ecological and cultural resources in the project area include the following:

- Scenic beauty of the river
- Native American cultural resources in the floodplain and adjacent Trimbelle River terrace and Prairie Island
- Prairie Island Indian Community
- Floodplain forest, floodplain lakes and emergent marsh wetlands in Pool 3, the Marsh and Gantenbein Lakes area and Cannon River Bottoms in upper Pool 4
- Migratory fish, including sturgeon, paddlefish

Freshwater mussels in the lock and dam 3 tailwater. The federally-listed endangered mussel Lampsilis higginsi has recently been reintroduced to Pool 3.

- Migratory birds that use the floodplain lakes and forest in the project area, including neotropical warblers, raptors, colonial-nesting herons and egrets, and waterfowl
- Bald eagles that nest near Lock and Dam 3
- Tailwater sport fishery supported by walleye and sauger
- Very large backwater lakes (North Lake and Sturgeon Lake)

3. PROBLEM IDENTIFICATION: The river ecosystem in Pool 3 has been significantly altered from its former condition through the effects of impoundment, river regulation, habitat loss, sedimentation, overexploitation of fish and mussels, and degraded water quality. Change in the hydrologic regime has been profound. Since completion of Lock and Dam 3 in 1938 for commercial navigation purposes, the dam has inundated 17,950-acre Pool 3, continuously flooding former seasonally-flooded floodplain and aquatic areas. Initially productive, the extensive shallow backwater lakes and marshes in Pool 3 had abundant aquatic plants, fish, and wildlife. Pool 3 became renowned for migratory waterfowl and hunting opportunities. Over time, the minimum water level maintained for navigation resulted in a marked decline in the extent of emergent and submersed aquatic vegetation. Wind-driven sediment resuspension in the backwater lakes has maintained turbid conditions that further limit aquatic plants.

These physical and water level changes have resulted in reduced habitat diversity and quality, loss of aquatic vegetation and invertebrates, reduced water clarity, and reduced abundance of fish and wildlife in Pool 3. The Pool 3 ecosystem will continue to decline if the existing water level operating regime remains in place.

4. PROJECT GOALS AND OBJECTIVES: The goals of ecosystem restoration in Pool 3 using water level management are to 1) Increase the extent and

abundance of aquatic vegetation, with a special emphasis on perennial emergent species; 2) Maintain a safe commercial navigation channel; 3) Minimize adverse effects on river resources and river uses, 4) Modify the Lock and Dam 3 Reservoir Regulation Manual to include water level management for ecosystem restoration as part of the routine river regulation; and 5) Learn about the ecological effectiveness and other effects of water level management in Pool 3 and adaptively implement future water level management.

Ecosystem objectives for the Pool 3 river ecosystem have been identified by NESP partners and the NESP Science Panel. An initial set of ecosystem objectives and associated performance criteria related to water level management in Pool 3 are shown in Table 1. Specific areas in lower Pool 3 identified in the performance criteria are shown in Figure 2.

UMRS system- and reach-scale ecosystem objectives have not yet been set. The NESP Science Panel is recommending a framework for system-wide and reach-scale objectives. Pool 3 is in UMR Geomorphic Reach 1, along with Pools 1 and 2. Increasing the extent of aquatic vegetation and naturalizing the hydrologic regime with pool-scale drawdowns will be among the primary ecosystem objectives for this river reach.

Table 1. Potential ecosystem objectives and performance criteria for Pool 3 related to water level management.

NESP Objective Number	NESP Ecosystem Objectives	NESP Performance Criteria
	1. Water Quality	
1.9	Maintain water clarity sufficient to support submersed aquatic vegetation and aquatic invertebrates and fish species appropriate to location	Maintain Secchi transparency of at least 0.5m 90 percent of the time during the June 15 through September 15 growign season.
	2. Geomorphology	
2.4	Increase the extent and number of mud flats	Dewater [ ] acres mud flats in lower Pool 3 to enable germination of emergent aquatic plants.
	3. Hydrology/River Hydraulics	
3.3	Restore a more natural hydrologic regime in the navigation pools	Draw down Pool 3 to elevation 672.5 during the June 15 to September 15 growing season to elevation 673.25 during two successive years. Conduct subsequent drawdowns as needed to restore aquatic vegetation (Objectives 4.4 and 4.5 below).
3.4	Restore a more natural hydrologic regime in floodplain waterbodies	Draw down Mudhen Lake to elevation [ft] by inlet closure and pumping during the June 15 to September 15 growing season for two successive years. Conduct subsequent drawdowns as needed to restore aquatic vegetation (Objectives 4.4 and 4.5 below).
3.7	Reduce wind fetch in open water areas	Reduce wind fetch in North and Sturgeon Lakes to meet the following criteria: Depth 1 ft Fetch 500 ft; Depth 2 ft Fetch 1500 ft Depth 3 ft Fetch 3500 ft; Depth 4 ft Fetch 6000 ft
	4. Habitat	
4.4	Modify the extent, abundance and diversity of submersed aquatic plants	Increase the extent of submersed aquatic plants in lower Pool 3 to [+/- acres] by 2010.
4.5	Modify the extent, abundance and diversity of emergent aquatic plants	Increase the extent of emergent aquatic plants in lower Pool 3 to [+/- acres] by 2010. In Mud Hen, North, and Twin Lakes, increase emergent aquatic plants to a 50% vegetated 50% open water hemi-marsh condition by 2010.
4.7	Modify backwaters to provide suitable habitat for fishes	Increase the extent of emergent aquatic plants in lower Pool 3 to [acres] by 2010 to benefit lentic fishes. In Sturgeon and North Lakes, increase occurrence of submersed aquatic plants to 50% of sampled areas that are less than 3 feet deep.
	5. Biota	
5.1	Maintain viable populations of native species throughout their range in the UMRS at levels of abundance in keeping with their biotic potential	Increase waterfowl use days on North Lake to [+/- per year] by 2010. Increase the number of muskrat huts on North, Twin, Sharp Muskrat, and Mud Hen Lakes to [+/_] by 2010.

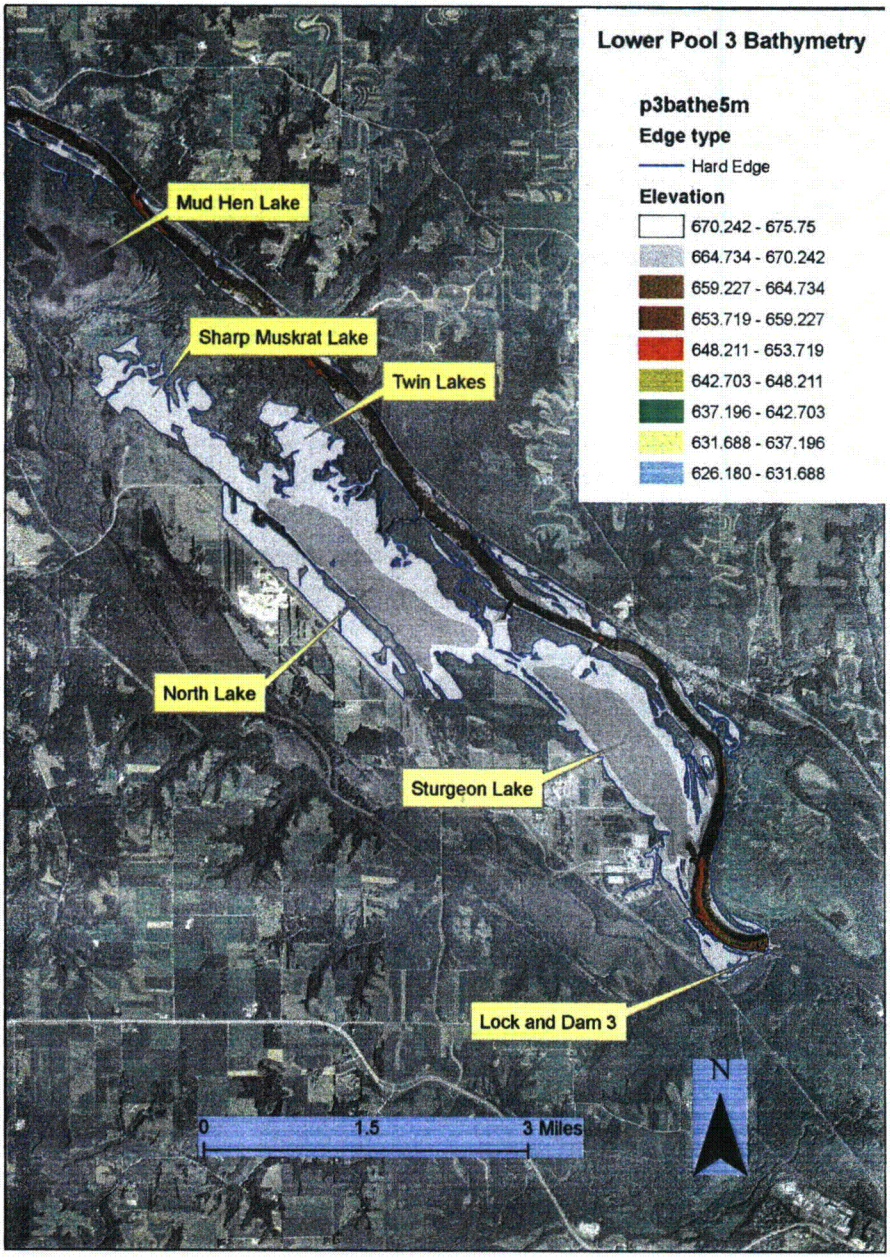


Figure 2. Lower Pool 3 Mississippi River bathymetry.

5. PROPOSED PROJECT: The proposed project is to use water level management for ecosystem restoration of Pool 3. Both pool-scale and smaller-scale growing season drawdowns will be done to restore aquatic vegetation and to consolidate sediment in the dewatered areas. The drawdowns will be conducted during the mid-June to mid-September growing season. Second year partial drawdowns will be done to allow plants established in the first year to grow to full size.

A number of drawdown alternatives will be considered during the planning process. Alternative drawdown depths at Lock and Dam 3 will include 0.5 ft, 1.0 ft, 1.5 ft and 2.0 ft. Alternative drawdown depths at the primary control point at Prescott, Wisconsin (RM 811.4) will include 0 ft, 0.5 ft, and 1.0 ft. This array of 12 alternatives for pool-scale will be evaluated for practicability, cost, ecological effectiveness and impacts on infrastructure.

In addition to pool-scale drawdowns, opportunity exists to conduct growing season drawdowns on smaller-scale floodplain waterbodies by temporarily blocking connecting channels with temporary fill, sandbags or water-filled bladders, and then pumping the lake out. Mud Hen Lake (Figure 2) is a shallow floodplain lake that is a good candidate for a smaller scale drawdown to restore aquatic vegetation.

Implementation of water level management for ecosystem restoration in Pool 3 will include a monitoring, evaluation of project impacts and effectiveness, learning, and adaptive management.

The initial pool-scale drawdown of Pool 3 for ecosystem restoration will require a waiver from the Reservoir Regulation Plan for Lock and Dam 3 from the Corps Mississippi Valley Division. We intend to modify the Reservoir Regulation Plan to accommodate future drawdowns of Pool 3 as needed to restore aquatic vegetation.

Project Importance:

The EMP System Ecology Team (SET) has identified a number of ecological considerations for assessing the relative contribution of proposed projects to the river ecosystem and for sequencing their implementation. The following discussion of the SET ecological considerations addresses how the Pool 3 Water Level Management Project would contribute to them.

Contribution to Learning - The Pool 3 Water Level Management project would provide an opportunity to advance adaptive ecosystem management on the UMRS through application of predictive modeling for restoring aquatic vegetation in currently unvegetated backwaters. Application of the POTAM and VALLA models would identify the light attenuation coefficient needed to allow growth of submersed aquatic plants and would allow hypothesis testing for the effects of the project on sediment resuspension and plant response.

Benefits Over Multiple Scales – Restoration of aquatic vegetation in lower Pool 3 would produce benefits over multiple geographic scales by providing food for migrating waterfowl.

Sustainability – A growing season drawdown in lower Pool 3 would restore emergent and submersed aquatic plants which would be self-maintaining and persist for a number of years.

Critical Habitat Gains – Any increase in aquatic vegetation in lower Pool 3 would be a welcome gain in habitat quality for fish and wildlife in a part of the UMR near other high-quality habitat areas and the Red Wing-Hastings-Twin Cities metropolitan area.

Compatibility with Existing Plans – The Pool 3 Water Level Management Project would be compatible with the existing water control plan for Pool 3, the Channel Maintenance Management Plan, the management plan for the Minnesota DNR Gores Wildife Mangement Area and the natural resources management plans of the Prairie Island Indian Community.

Geomorphology – The Pool 3 Water Level Management Project would not alter the existing geomorphology of Pool 3.

Water Quality – The project would improve water quality by consolidating sediment, reducing wind-driven sediment resuspension, increasing water clarity, and by removing nitrogen.

Habitat – The project would significantly increase the area and quality of vegetated backwater habitat for fish and wildife.

Ecosystem – The project would increase primary production of submersed and emergent vegetation, contribute to changing the ecosystem state of Pool 3 from unvegetated turbid to vegetated clearer water condition, increase the secondary production of macroinvertebrates and zooplankton, and would remove and sequester nitrogen.

Biota – The project would increase the distribution and abundance of aquatic vegetation, and would provide substantially increased food and habitat for backwater and riverine fish, migratory waterfowl, furbearers, amphibians and reptiles.

Hydrology and Hydraulics – The project would naturalize the hydrologic regime through growing season drawdowns in lower Pool 3, simulating the natural low water summer conditions that emergent aquatic plants need to germinate from seed.

6. PROJECT MONITORING

The monitoring plan to support this adaptive management approach for a Pool 3 drawdown is summarized below. The lead entity for each monitoring effort is shown

in parentheses. Some of the work to be done by agency partners will be "in-kind", and is not shown in the project cost estimate.

1. **Hydrologic and Weather (MVP Operations)**
    - Water levels
    - River discharge
    - Weather
2. **Vegetation (UMESC)**
    - Emergents
    - Submersed plants
3. **Sediment (MVP Hydrology and Hydraulics)**
4. **Macroinvertebrates (Fish and Wildlife Service)**
5. **Mussels (MVP, State partners, Fish and Wildlife Service)**
    - Stratified random quantitative survey
    - Stratified random survey during drawdown
6. **Fish (State partners)**
    - Stranding
    - Young of year and small fish
7. **Birds (Fish and Wildlife Service)**
    - Migrating waterfowl use
    - Eagle nesting
    - Bitterns and rails
8. **Amphibians (Fish and Wildlife Service)**
    - Spring call survey
9. **Water quality (State partners)**
    - Sediment resuspension, suspended solids
    - Dissolved oxygen
    - Reduce nitrogen export
10. **Navigation (MVP Operations)**
    - Depth over LD 4 lower lock sill
    - Channel depth
11. **Operation and Maintenance of 9-foot channel project (MVP Operations)**
    - Survey navigation channel
    - Estimate sediment accumulation in cuts
    - Record dredging volumes
    - Sediment mobilization – hydrodynamic modeling
12. **Cultural Resources (MVP – Environmental/Cultural Resources)**
13. **Recreational usage (MVP Operations, State partners)**
    - Random access survey
    - Watercraft distribution and density

7. IMPLEMENTATION CONSIDERATIONS:

River Discharge

A critical consideration is estimating the probability of conducting an ecologically successful drawdown at different levels of river discharge. The potential for an ecologically successful drawdown is a function of the frequency and duration of reflooding of the drawdown zone during the growing season. Longer reflooding events can kill recently germinated emergent aquatic plants. The criteria for determining success include 1) drawdown during the growing season; 2) less than one week of reflooding in any one event; and 3) less than two reflooding events during the growing season.

Because Lock and Dam 3 has only four roller gates and a limited controlled discharge capacity, the probability of being able to maintain a drawdown at the dam at higher levels of river discharge is limited. Therefore, the probability for an ecologically successful pool drawdown is best for lesser drawdown depths (Table). Given the bathymetry of Pool 3 (Figure 2), smaller-depth pool drawdowns could still dewater significantly large areas and result in good response by aquatic plants.

Table 2. Probability of maintaining a growing season drawdown of Pool 3 for 50-percent of the growing season based on the period of record 1959 through 2007..

0.5-ft at Dam / 1.0-ft at Control Point	77.1%
1.0-ft at Dam / 1.0-ft at Control Point	54.2%
0.5-ft at Dam / 0.5-ft at Control Point	29.2%
1.5-ft at Dam / 1.0-ft at Control Point	29.2%
0.5-ft at Dam / 0.0-ft at Control Point	25.0%
1.0-ft at Dam / 0.5-ft at Control Point	22.9%
1.0-ft at Dam / 0.0-ft at Control Point	18.8%
1.5-ft at Dam / 0.5-ft at Control Point	12.5%
2.0-ft at Dam / 1.0-ft at Control Point	12.5%
1.5-ft at Dam / 0.0-ft at Control Point	6.3%
2.0-ft at Dam / 0.5-ft at Control Point	6.3%
2.0-ft at Dam / 0.0-ft at Control Point	0.0%

The current and forecasted levels of river discharge will be used as decision criteria to initiate pool-scale drawdowns.

Prairie Island Indian Community

The Prairie Island Indian Community (PIIC) is located on Prairie Island in Minnesota on Pool 3 upriver from Lock and Dam 3. The PIIC owns and operates a casino, a hotel, a 95-site RV park, a 137-slip marina and a 125-passenger cruise ship. A dredged channel through Sturgeon Lake provides access from the main channel to the Prairie Island Marina. In an August 20, 2007 meeting with the PIIC Department of Natural Resources and Marina managers, the PIIC expressed interest and support for water level management in Pool 3. They plan to dredge the marina and parts of the access channel in

2008. A pool scale drawdown on Pool 3 of 1.5 ft at Lock and Dam 3 would not restrict navigation access or use of the Prairie Island Marina.

The Pool 3 area is well known for its numerous archaeological sites, including one of the more dense concentrations of burial mounds on the UMR. The PIIC is concerned that drawdowns could expose cultural resources sites. Reestablishing emergent aquatic plants could serve to conceal cultural artifacts in shallow water areas of Pool 3. The St. Paul District will compile information about cultural resources in lower Pool 3, coordinate with the PIIC and the Minnesota and Wisconsin State Historic Preservation Officers, conduct any needed surveys, and take measures to protect cultural resources during drawdowns on Pool 3.

Channel Maintenance

Channel surveys and advance maintenance dredging authority will be requested to ensure a safe navigation channel during pool-scale drawdowns. The St. Paul District plans to excavate up to 475,000 cubic yards from Corps Island in lower Pool 3 and place the material at the Pierce County Pit in year 2010. In addition, there is an EMP proposed HREP project Fact Sheet for North and Sturgeon Lake which poposes island construction, which could provide placement sites for dredge material. Dredged material from advance dredging for a Pool 3 drawdown would be placed at either Corps Island or would be used for island construction in North and Sturgeon Lakes. Channel geometry and dredging requirements will be monitored to determine carry-over benefits from advance dredging. Condition of the navigation channel will be a decision criterion for implementing a pool scale drawdown.

Recreational Boat Access

Pool 3 has the highest recreational boating traffic on the Upper Mississippi River. Most of the recreational boating activity and marina facilities on Pool 3 are in the upriver part of the pool near Hastings, Minnesota, and Prescott, Wisconsin.

The Prairie Island Indian Community operates the Prairie Island Marina on Sturgeon Lake. They also base a 120-passenger tour boat, Spirit of the Water, at the Prairie Island Marina. Other tour boats make scheduled visits to the Prairie Island Marina. The Prairie Island Indian Community plans to dredge their marina and access channel through Sturgeon Lake in 2008 and could readily accommodate a 1.5 ft drawdown at Lock and Dam 3.

Excluding the St. Croix River, Pool 3 has ten boat landings, eight of which are in Minnesota and two are in Wisconsin. Of the 669 marina slips in Pool 3, 525 are in Minnesota. The Corps maintains one two-lane boat launching ramp on Sturgeon Lake. Red Wing Harbor Park, Lake Rebecca Municipal Park in Hastings and the Jacques Landing and Freedom Park at Prescott, Wisconsin provide municipal day-use recreation facilities along the river.

It is necessary to provide reasonable recreational boat access to the pool under drawdown conditions. The majority of the recreational boating access facilities on Pool 3 are in the upper part of the pool where effects of a drawdown at the dam would be negligible. Little advance dredging would be needed to maintain recreational boating access to Pool 3 during a pool scale drawdown.

Xcel Energy Prairie Island Nuclear Generating Plant

The Prairie Island Nuclear Generating Plant, located just upstream of Lock and Dam 3, is a two-unit 1,090-megawatt nuclear power plant with pressurized water reactors. This facility requires a minimum river water level to withdraw cooling water and to dissipate thermal discharges.

Xcel Energy Allen S. King Generating Plant

The Alan S. King Generating Plant is located on the St. Croix River in Oak Park Heights, Minnesota. It is a single-unit, 529-megawatt coal-burning power plant. This facility also requires a minimum river water level for cooling water withdrawal and to dissipate thermal discharges.

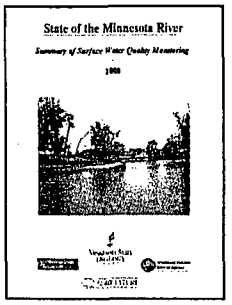
8. FINANCIAL DATA

The cost of project planning and preparing a Project Implementation Report and Environmental Assessment, and implementing a one-year pool-scale drawdown program, is estimated to be approximately $2,000,000 (2007 dollars). Cost of implementing a two year pool-scale drawdown, with advance dredging and two years of smaller-scale drawdown, monitoring, evaluation, and reporting, is estimated to be approximately $2,700,000.

9. POINT OF CONTACT

The Team Leader for this project is Jeff DeZellar, P.E., CEMVP-PM-A, 651-290-5433, jeffrey.t.dezellar@usace.army.mil.

MINNESOTA RIVER BASIN DATA CENTER



State of the Minnesota River: *Summary of Surface Water Quality Monitoring 2000*

Download Report

The purpose of this Summary Report is to consolidate surface water quality monitoring information collected in the Minnesota River Basin for the calendar year 2000. This Report pulls together data collected by multiple agencies and organizations and presents the data in a fashion that allows for comparison between some of the major tributaries and mainstem sites in the Minnesota River Basin.

This initial attempt to summarize annual water quality data collected by multiple agencies falls short in that not all tributary data were able to be included in the report. Noticeably lacking are data from tributaries located on the Lower Minnesota River between St. Peter and the confluence with the Mississippi River at Fort Snelling. Previous work has indicated that this portion of the basin contributes a sizable portion of the nonpoint load to the Minnesota River. Although monitoring stations exist in this portion of the basin, at the time this report was being assembled, some organizations had not finalized data analysis for the year 2000. It is expected that the 2001 Summary Report will include data from some of these missing watersheds or stations. In addition, this Report does not include data from many of the smaller tributaries and field scale evaluations occurring within the basin.

This Report also helps fulfill the overall mission of the Minnesota River Basin Data Center, which is to inventory, develop, retrieve, interpret and disseminate information on topics that impact the environment, economy and communities within the Minnesota River Basin. This mission was first articulated by the Citizens Advisory Committee in a series of recommendations to Minnesota Pollution Control Agency (MPCA), and later by the Minnesota River Basin Joint Powers Board. This report is not related to any state mandates or requirements and all organizations and agencies participated voluntarily.

The most comprehensive study of water quality in the Minnesota River Basin, the 1994 Minnesota River Assessment Project (MRAP), concluded that the Minnesota River is impaired by excessive nutrient and sediment concentrations. Since the publication of MRAP, several organizations throughout the basin have taken responsibility for collecting additional data to better define tributary characteristics and learn more about how these tributaries affect the condition of the Minnesota River. In many parts of the basin, this information is used to target implementation practices that reduce nonpoint source pollution, thereby improving the overall health of the Minnesota River. Local watershed projects are supported mainly by Clean Water Partnership grants administered by the MPCA. Much of the remaining data presented in this Report are provided through monitoring programs of

the Minnesota Department of Agriculture and Metropolitan Council Environmental Services with contributions from the United States Geological Survey (USGS) and the Minnesota State Climatology Office.

A secondary purpose of this Summary Report is to provide a forum for continued discussion and improvement of the methodologies used by various organizations to collect and interpret physical and chemical water quality data. Presently, within the Basin, slightly different methodologies are used to collect and analyze data. By documenting and assessing current methodologies, we can begin to identify those of greatest utility and hopefully improve efficiencies and reduce costs. More importantly, adoption of a standard set of methods will allow us to draw more meaningful and accurate water quality comparisons across the basin. This, in turn, should help direct limited resources to areas of greatest need.

Preparation of this Summary Report is a joint venture of the Metropolitan Council Environmental Services, Minnesota Department of Agriculture, Minnesota Pollution Control Agency, and the Water Resources Center at Minnesota State University, Mankato. The report is posted on the Minnesota River Basin Data Center web site at http://mrbdc.mnsu.edu/ to allow wide access and opportunity for review and comment on its content.

Contributors

Data to compile this report were submitted and reviewed by representatives of several organizations including:

Brown-Nicollet-Cottonwood Clean Water Project
Chippewa River Watershed Project
High Island Creek Watershed Assessment Project
Martin County Environmental Services
Metropolitan Council Environmental Services Program
Minnesota Department of Agriculture Surface Water Monitoring Program
Minnesota Pollution Control Agency, Mankato Office
Redwood-Cottonwood Rivers Control Area
Watonwan River Clean Water Partnership Project
Water Resources Center, Minnesota State University, Mankato

The authors would also like to acknowledge the USGS for much of the flow data that was utilized in the completion of this Report. They are a valuable resource for many organizations throughout the Minnesota River Basin.

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The *State of the Minnesota River* report is available as a complete document or is available in sections as listed below. The report may be viewed or printed by choosing from the list of pdf files. Download time increases with file size and when using a modem. Viewing and printing time may be decreased by saving the pdf file to your computer's hard drive.

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Appendices *(pdf 18 K)*
Map page vi *(pdf 453 K)*

Return to MRBDC Home Page

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