

Natural Gas Pipeline and Partial Exemption Application

Faribault Energy Park, LLC
Minneapolis, MN

March 2004



Stanley Consultants INC.

A Stanley Group Company
Engineering, Environmental and Construction Services - Worldwide

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Executive Summary

Faribault Energy Park, LLC (FEP) is proposing to build a 250 megawatt (MW) electrical power generating station on a 37 acre site in the northern portion of the City of Faribault, between Interstate 35 and State Highway 76. This is FEP's preferred site. The Natural Gas Pipeline and Partial Exemption Application is for approval to tap an existing interstate gas pipeline that is located on the west edge of the preferred building site for the FEP generation facility. FEP has identified two potential building sites for their generation facility. The preferred site has an existing Northern Natural Gas pipeline adjoining the west side of the power plant site where a tap into the existing pipeline would be made. The new tap will lead to a valve and metering station and then to the electrical generation station located approximately 1,000 feet to the south and east of the tap. The alternate site is 1,200 feet immediately east of the preferred site. If the alternate site were chosen, the new electrical generation facility is located approximately 2,200 feet to the south and east of the tap. At the preferred site, the entire pipeline will be in property owned by FOP. As a result, the pipeline would not be entirely contained within property owned by FEP. This would create an additional easement need and resultant cost.

Both locations will have minimal impact on soils, water, vegetation and wildlife, and cultural resources. However, the preferred site will have the lesser impact of the two possible locations. Regardless, creation of this pipeline will not have a significant impact of humans, human health, or the environment.

Introduction

Faribault Energy Park, LLC (FEP) hereby makes application to the Minnesota Environmental Quality Board (MEQB) for a pipeline routing permit and for partial exemption from pipeline route selection procedures pursuant to Minnesota Rules, Chapter 4415. FEP is making an application for an alternative permitting process for the construction of a 10.75-inch outer diameter natural gas pipeline. FEP has identified two sites, with the designation of a preferred site and an alternate site. The preferred site would have a gas line approximately 1,200 feet in length from the source to the FEP power generation facility. The alternate site would have the gas line approximately 2,200 feet in length from the sources to the FEP generation facility.

Statement of Ownership and Affidavit of the Proposed Natural Gas Pipeline

FEP will construct, own, operate and maintain the proposed 10.75-inch natural gas pipeline, 250 MW power generation station and related equipment.

Permittee/Project Manager

The project is being proposed by Faribault Energy Park, LLC. The project contact is:

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General Description of the Proposed Gas Line and Associated Facilities

General Location

The new gas line for the preferred site is located in the southwest $\frac{1}{4}$ of the northeast $\frac{1}{4}$ of Section 13, Township 110N, Range 21W. The alternate site is located east-northeast of the preferred site in the general southeast $\frac{1}{4}$ of the northeast $\frac{1}{4}$ of Section 13, Township 110N, Range 21W.

Planned Use and Purpose

For the preferred site, the new gas line will tap into the existing Northern Natural Gas line located on the northwestern edge of the property and traverse south 600 feet and then east approximately 400 feet to the FEP generation facility. For the alternate site, the new gas line will start at the northwestern edge of the property and traverse south approximately 600 feet and east approximately 1,600 feet to the alternate FEP generation facility. Figure 1 is the general vicinity map showing both the preferred and alternate site locations. Figure 2 is the general vicinity map showing the preferred location. Figure 3 is the concept plan showing the preferred site with proposed gas line route and Figure 4 is the concept plan showing the alternate site with the proposed gas line route.

General Design and Operational Schedule

The proposed pipeline will be 10-inch outer diameter welded steel, fusion bonded epoxy coated pipe. The proposed Maximum Allowable Operating Pressure (MAOP) for the new pipeline facility will be 720 psig.

Planned In-Service Date

FEP proposes to have the new line available for service by December 1, 2005. The construction schedule is as follows:

Table 1 Project Schedule

Permitting	March to April 2004
Right-of –Way (ROW) Acquisition	May 2004
Survey	June 2004
Line Design	June 2004
Gas Line Construction (start date)	August 2004

Estimated Project Costs

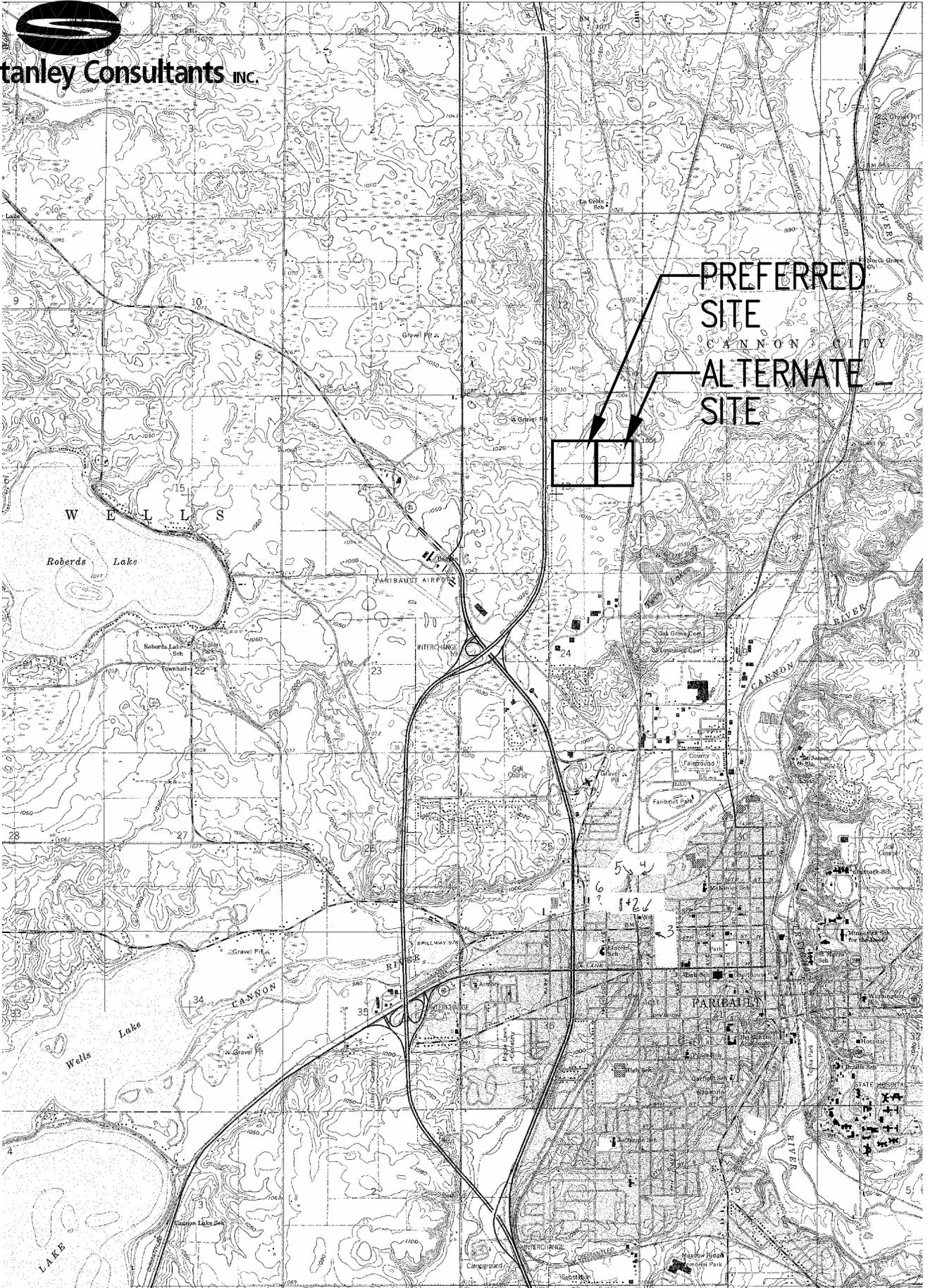
FEP's preliminary estimate of construction costs for the gas line is as follows:

Nominal 10-inch outer diameter gas line (preferred site) - \$1.3 Million

Nominal 10-inch gas line (alternate site) - \$2.4 Million



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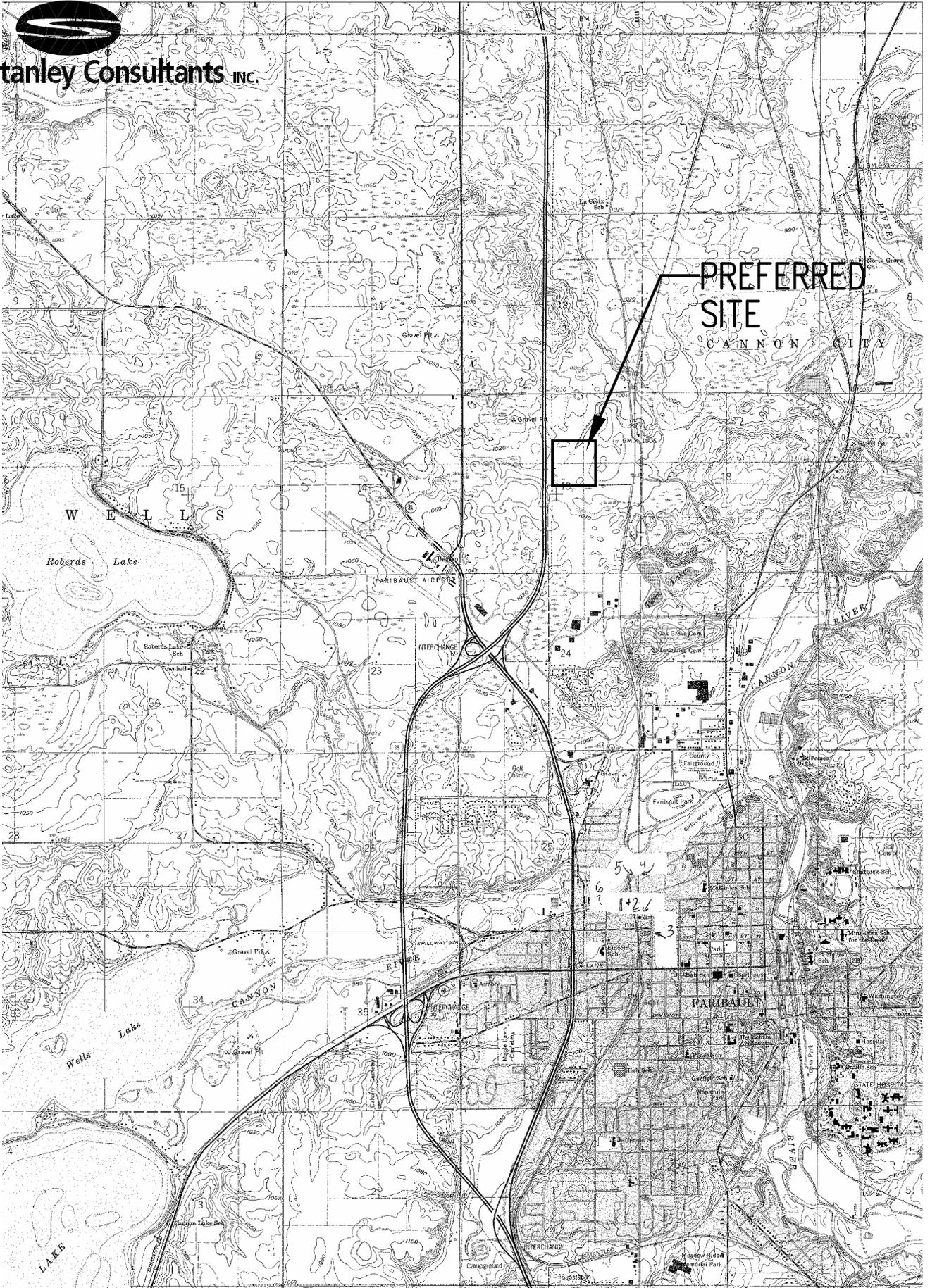
PREFERRED
SITE
ALTERNATE
SITE

\$\$\$\$\$FILENAME\$\$\$\$\$
CADD AZ-R4 © STANLEY CONSULTANTS

Vicinity Map
Figure 1



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\$\$\$\$\$FILENAME\$\$\$\$\$
CADD AZ-R4 © STANLEY CONSULTANTS

Vicinity Map
Figure 2



FARBAULLT ENERGY PARK MAJOR FACILITIES FACILITY	
A.	HEAT RECOVERY STEAM GENERATOR
B.	STACK
C.	NATURAL GAS TURBINE GENERATOR
D.	STEAM TURBINE GENERATOR
E.	WATER STORAGE TANK
F.	FUEL OIL STORAGE TANKS
G.	COOLING TOWER
H.	ELECTRICAL SUBSTATION
I.	TRANSMISSION INTERCONNECTION
J.	STEAM TURBINE BUILDING
K.	NATURAL GAS VALVE & METERING STATION
L.	WATER WELL
M.	NOT USED
N.	SEPTIC ABSORPTION FIELD
O.	STORMWATER DETENTION POND
P.	NOT USED
Q.	NOT USED
R.	NOT USED
S.	NATURAL GAS SUPPLY PIPELINE
T.	NOT USED
U.	NOT USED

CONCEPT PLAN

Concept Plan
 Alternate Site
 Proposed Gas Line
 Figure 4

Description of Proposed Pipeline and Associated Facilities

Pipeline Design Specifications

The specifications for pipeline design and construction are assumed to be in compliance with all applicable state and federal rules or regulations unless determined otherwise by the state or federal agency having jurisdiction over the enforcement of such rules or regulations. For public information purposes, the anticipated pipeline design specifications must include but are not limited to the *United States Department of Transportation Safety Regulations, Title 49 Code of Federal Regulations (CFR) Part 192*, prescribing minimum federal safety standards for construction, operation and maintenance of natural gas pipelines.

FEP will comply with safety standards for construction, operation and maintenance of natural gas pipelines. FEP will comply with 49 CFR Parts 191, 192, and 199 in constructing, operating and maintaining the proposed line. Pipeline safety matters for this facility are under the jurisdiction of the Minnesota Office of Pipeline Safety (OPS).

Pipe Size (nominal outside diameter):

10-inches

Pipe Type:

American Petroleum Institute (API) has a published specification for high-test line pipe. This specification covers various grades of seamless and welded steel line pipe and specifies manufacturing process, chemical and physical requirements, test methods, dimensions and other parameters. Grade designates pipe manufactured according to API specification 5L with required minimum yield strength designated in pounds per square inch. Electric resistance weld (ERW)

pipe has one longitudinal seam, which is formed by electric resistance welding during the manufacturing process.

Nominal Wall Thickness:

Nominal Outside Diameter (in.), Nominal Wall Thickness (in.)

Mainline: 10, 0.156

Under Roads and Streams: 10, 0.237

Pipe Design Factor:

0.72

Longitudinal or Seam Joint Factor:

1.0

Class Location and Requirements, Where Applicable:

Class location determines which design factor safety value is used in the design formula. For this site we have used Class 1 requirements. The design factor safety value used for natural gas steel pipeline is based on requirements of 49 CFR 192.111.

The specified strength for pipe used in this project will have a minimum yield strength of 52,000 pounds per square inch (psi.) In accordance with API 5L, pipe used on this project will have a minimum tensile strength of 66,000 psi.

Operating Pressure

The normal operating pressure of this facility will be between 400 pounds per square inch gauge (psig) and 720 psig.

Maximum Allowable Operating Pressure (psig)

The maximum actual operating pressure of the proposed pipeline will be 720 psig.

Description of Associated Facilities

This project will have above ground valves at the beginning and end of the pipeline along with associated launching and receiving scraper traps. At the Northern Natural Gas tap, there will be regulation and measurement facilities aboveground. FEP will install marker posts along the route to identify the location of the buried facilities. At the end, the line will terminate at the FEP electric generation facility.

Construction and Environmental Information

Product Capacity Information

The proposed pipeline and associated facilities are designed to have a maximum throughput capacity of 5,000 million cubic feet per day. The minimum throughput design is 2,400 million cubic feet per day.

Product Description

The proposed pipeline will carry natural gas (methane), a non-hazardous, but highly flammable gas, to be used by FEP as the primary fuel for the generation of electricity. A Material Safety Data Sheet (MSDS) for natural gas is contained in Appendix A.

Land Requirements

Permanent Right-of-Way (ROW) Requirements

If the preferred site is used no ROW will be required, as the alignment will be entirely owned by FEP. If the alternate site were selected then a ROW of approximately 2,200 feet in length and approximately 30 feet in width would be needed. An easement of 1.51 acres of land would need to be purchased from the current landowner if the alternate site is selected.

Temporary ROW Requirements

If the preferred site is used no additional temporary ROW would be required. If the alternate site is selected an additional 20 feet of temporary workspace will need to be acquired. It is anticipated that this space would not be fully utilized but would give the construction crews approximately 50 feet of ROW for workspace if needed. Localized conditions such as a water body crossing may require temporary additional workspace to complete the installation. Permission to use temporary workspace will be obtained from the landowner. Approximately one acre of temporary workspace will be acquired.

Trench or Ditch Dimensions / Cubic Yards of Material Moved

Trenching is typically accomplished using a crawler-mounted, wheeled-type ditch digging machine or backhoe. Typically the ditch will be 60 inches deep to allow sufficient cover as specified by statute. Trench width will be a minimum of 12-inches for the 4.5-inch outside diameter pipe. If the preferred site were to be used and assuming the maximum possible depth this project will result in approximately 186 cubic yards of soil excavation. If the alternate site were to be used, approximately 409 cubic yards of soil will be excavated. The State of Minnesota requires a minimum depth of cover to be 54 inches in certain areas as detailed in Minnesota Statutes 116I.06, Subdivisions 1, 2, and 3. FEP will require a minimum of 54 inches of ground cover for this proposed pipeline. Federal minimum cover requirements range from 18 inches to 48 inches depending on the circumstances encountered.

ROW Sharing or Paralleling

In the case of the preferred site ROW, issues dealing with other gas line ROWs will not be a concern because the pipeline tap, metering station, and alignment would be within land entirely owned by FEP and there would be no other easements aside from the Northern Natural Gas Pipeline easement located within the site. If the alternate site is to be used, the FEP gas line will intersect the Williams Pipeline Company and Koch Industries Inc. pipelines, and thus, FEP will need to address the crossing with Williams and Koch if this alternate location is chosen. Crossing pipeline easements is problematic and not a desired alternative in this case, because the alignment would only cross, resulting in construction and operations and maintenance concerns. This would not be a desired alternative for these reasons.

Project Expansion

The proposed gas pipeline is designed to meet both current and future natural gas supply needs for FEP's power generation facility. No plans for expansion have been incorporated into the design.

ROW Preparation Procedures and Construction Activity Sequence

The initial step in construction of a pipeline is to prepare the ROW. The centerline of the pipeline and points of intersection tangents (PI's) will be established by a survey. Staking will be at a maximum of 400-foot intervals.

In the case of the preferred alternative, construction of the natural gas pipeline would not result in idling or otherwise negative impact to agricultural land, as the land would entirely be owned by FEP and converted to other purposes as a result of the attendant power plant construction. The contractor will clear crops from the 50 foot wide ROW as needed. Aboveground vegetation and obstacles would only be cleared as necessary to allow safe and efficient use of construction equipment. Storage areas required for equipment, pipe, and other materials will be on FEP property. For both alternatives, one agricultural drainage ditch crossing will be completed by using common construction techniques complying with applicable regulatory requirements.

Clearing/Grading

Clearing of the ROW would follow accepted industry practices and sound construction guidelines. For this project, the predominant land use is agricultural farming. Debris created from ROW preparation will be disposed of using approved methods during restoration.

When the construction area is clear of obstacles and prior to trenching, the contractor will grade the area as is necessary to create a relatively flat work surface for the passage of heavy equipment and vehicles for subsequent construction activities. Minimal grading would be required on most of the ROW where the terrain is flat to gently sloping.

Trenching

The Contractor will perform most trenching using a bucket-wheel ditching machine. However, the Contractor may use conventional tracked backhoes where ground conditions are unsuitable for a ditching machine or where they can expedite excavation.

Trench dimensions will comply with applicable normal land use and regulatory requirements. To insure the pipe is at the proper depth, the trench is drained or pumped dry where practicable. Where the pipe crosses highway or road ditches, the excavation of trenches or borings is deep enough to provide a minimum of 54 inches of cover over the pipe to comply with Minnesota Department of Transportation (MNDOT) requirements.

In areas where there is a need to separate top and subsoil, a two-pass trenching process would be used. The first pass removes topsoil and stockpiles it along the outer edge of the ROW. The second pass removes subsoil and stockpiles it adjacent to the topsoil in such a manner as to avoid mixing of the two-soils. This allows for proper restoration of the soil during the backfilling process. The contractor places the sub-soil in the ditch first, and then finishes the backfill process with the topsoil. Spoil banks may have gaps to prevent storm runoff water from backing up or flooding.

Stringing

The operation of stringing involves the placement of pipe, from pipe storage areas at the FEP power generation site, along the ROW. Pipe will be loaded onto trucks, transported to the ROW, and unloaded. The pipe would be strung either prior to or after ditching.

Bending

After the joints of pipe are strung along the trench and before the sections of pipe are joined together, individual sections of the pipe are bent to allow for uniform fit of the pipeline with the varying contours of the bottom of the trench and to accommodate changes in the route direction. A track-mounted, hydraulic pipe-bending machine is normally used for this purpose when using the size of pipe proposed for this project.

FEP will limit the number of degrees of deflection in a field bend to 1½ degrees per foot per diameter inch. Bends required that are greater than that allowed in the field will be factory fabricated.

Line-Up

Installation of the pipe, following the bending, commences with internally swabbing the pipe, and aligning the bevels for welding. The weld material is deposited after the proper spacing and alignment of the bevels is accomplished. The line up clamp is held until enough of the weld is completed to assure weld integrity.

Welding

A very important phase of pipeline construction is the welding process. Welding is the joining of the individual sections of pipe to form the pipeline. Only qualified welders using appropriate procedures can weld on this project to meet code requirements. To maintain the rigorous qualifications for certification of pipeline welding, welders must have taken periodic weld tests.

A third party radiographic contractor will inspect approximately fifty percent of the welds using radiographic examination to determine the quality of the weld. Radiographic examination is a nondestructive method of inspecting the inner structure of welds to determine if any defects are present. Radiographic examination is a generally accepted method of pipeline quality control and the 50 percent sampling is within generally accepted pipeline construction guidelines. Defects will be repaired or removed as outlined in API 1104, the code for “Welding of Pipelines and Related Facilities” which is incorporated by reference by 49 CFR 192.

Coating and Lowering-In

After welding, the girth weld and the pipe adjacent to the weld must be protected from corrosion. When the field coating or wrapping of the weld is completed, the pipeline is ready to lower into the trench. Special side boom tractors spread out along the pipeline simultaneously, lift the line and move it over the open trench. The welded string of pipe is then lowered into the trench. An electronic detector monitors the coating during this operation to assure there is no damage to the coating. The detector is pulled along the circumference of the pipe and uses electrical voltage to find any voids in the coating.

Backfill

After lowering the pipe into the ditch, the contractor backfills the trench by placing the subsoil in the trench first and then placing the topsoil in the trench last. Additionally, the contractor is cautious to ensure that there is no damage to the pipe and pipe coating from equipment or from backfill material. If the preferred site is selected, the future land use of the pipeline area will be for purposes other than agricultural, so no net loss of farmland is anticipated. If the alternative site is selected, farmers may experience a slight decline in productivity above the pipeline because of some intermingling of the soils. To compensate farmers for this lost production, FEP will compensate landowners damages.

Testing

After backfilling, the pipeline would be tested to ensure that the system is capable of withstanding the operating pressure for which it was designed. The pipeline is filled with water and a pressure equal to 1.5 times the design pressure is maintained for a minimum of eight hours. Test water would be disposed of in accordance with applicable regulatory requirements.

Clean-Up and Restoration

The final phase of pipeline construction involves cleaning and restoring the ROW. Removal and disposal of construction debris and any surplus materials is part of the clean up. Restoration of the ROW surface involves smoothing by chisel plow or disc harrows or other equipment, and stabilizing when necessary. In non-cropland, the ROW is revegetated according to agreement with the landowner or appropriate government agency.

Location of Preferred Route and Description of Environment

Preferred Route

The preferred route would be entirely within the preferred site. The preferred route would be to tap the Northern Natural Gas pipeline on the northwest corner of the site and run a new line 600 feet to the south and 400 feet to the east to the FEP power generation facility, as depicted in Figure 3.

Other Route Locations

The alternate route would be to the alternate site that would include the crossing of property not owned by the FEP. The alternate route would be to tap the Northern Natural gas pipeline located on the northwest corner of the preferred site and run a new line 600 feet to the south and then 1600 feet to the east, as depicted in Figure 4.

Environmental Considerations

Human Settlement and Population Density

The proposed pipeline will be installed in a rural area that is currently in agricultural row crop production. The closest landowner is approximately 700 yards north and east of the preferred site and is approximately 200 yards north and east of the alternate site.

According to the National Wetlands Inventory Map, Appendix B, there are no wetlands identified on the proposed ROWs for either the preferred or alternate sites. However, a wetland delineation of the site was completed and there were several small areas that were identified. Sufficient care will be taken during the installation of the new gas line to avoid, mitigate or restore existing wetlands disturbed by installation of the pipeline in accordance with applicable regulatory requirements.

Soils

The potential project sites are in a geologic area with depth of unconsolidated materials up to 70-feet deep. Geologic formations consist of glacial till interlaced with variable quantities of glacial lake and glacial outwash materials. Much of the resulting soils are fine-grained and generally not very well drained. The specific conditions at the sites are typical of this area, made up of relatively poorly drained silt loams and loams.

According to the Rice County Soil Survey, four different soils are found within the project area sites:

- Cordova Clay Loam, 0-2 Percent – A poorly drained soil with moderately slow permeability. This soil can be found on the microlows of moraines.
- Hayden Loam 2-6 Percent – A well-drained soil with moderate permeability. This soil can be found on the summits of moraines.
- Hayden Loam 6-12 Percent Eroded – A well-drained soil with moderate permeability. This soil can be found on the backslopes and shoulders of moraines.
- Glencoe Clay Loam, Depressional 0-1 Percent – A very poorly drained soil with moderately slow permeability. This soil can be found in the depressions on moraines.

Water

One agricultural drainage ditch crossing has been identified for both the preferred and alternate site gas piping routes. The pipeline will cross an unnamed agricultural drainage ditch that is not listed as protected water by the MDNR. The proposed method of crossing will be directional drilling or alternative construction techniques in compliance with applicable regulatory requirements, such that there are negligible impacts to the agricultural drainage ditch. All appropriate permits will be secured prior to crossing the agricultural drainage ditch.

Vegetation and Wildlife

Impacts to vegetation and wildlife along the proposed route are expected to be minimal due to the general lack of cover and habitat present. Vegetation along the preferred pipeline route predominantly consists of cultivated land with some secondary grassland surrounding the lone agricultural drainage ditch. The agricultural drainage ditch crossed by the proposed pipeline route is classified as warm water and may contain species typical to warm water habitats. Wildlife species found along the pipeline route are typical to species found in any agricultural setting in the area.

A Minnesota Department of Natural Resources (MDNR) Stream Crossing permit application will be submitted to the Regional MDNR office and FEP will comply with permit requirements.

Cultural Resources

The Minnesota Historical Society State Historical Preservation Office (SHPO) was contacted to review the route pursuant to the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act. The site was identified during a 1996 pipeline survey that traversed the NW ¼ and NE ¼ of Section 13, adjacent to the survey area. The 1996 pipeline survey encompassed a total of 177.36 acres near the FEP project area and two sites were recorded for a density of 0.01 site per acre. The 1996 survey is the only documented archaeological survey conducted in or near the project area. This survey is included as Appendix C.

Special Areas

Due to the fact that the land is already disturbed by agricultural activities, and that the MDNR did not identify any state- or federally- listed threatened or endangered species at the site, or within a

one-mile radius of the site, it is not anticipated that the project would have a significant impact upon the species present in the project area. Additional information on this topic is included in Appendix D.

There may be a small number of existing deciduous trees and shrubs cleared in association with the project. The trees and shrubs will be cleared to facilitate construction. Little or no wildlife habitat will be lost. In the unlikely event that any species were displaced, their displacement would not be detrimental to their total populations.

Environmental and Economic Impact of Preferred Route

An analysis of the impacts from construction of the proposed pipeline indicates that any environmental impacts would be temporary. No long-term impacts are anticipated. On the preferred site, the pipeline is constructed within the FEP electrical generation project. For the alternate site, the pipeline would be installed almost entirely in cultivated cropland that would continue to be used for the same purpose after the project was completed. Likewise, no adverse impact on economics in the area is anticipated.

Human Settlement and Population Density

The project area is located in a row-cropped agriculture farm field. The closest residence using the preferred site is approximately 700 yards to the northeast of the proposed gas line. The closest residence if the alternate site were to be used would be 200 yards to the northeast of the proposed gas line. No significant or long-term demands for local government facilities or services would occur because of the short construction period.

Land Use

Regardless of whether the preferred or alternate site were selected, land within the permanent ROW and any temporary workspace would be impacted during the construction period. The impact would be short-term, as the construction period normally will last about thirty days at any one location.

If the preferred site were selected, all land overlying the ROW would be converted to use associated with the electric power generating plant. If the alternate site were selected, land would be restored as nearly as practicable to pre-construction conditions. No land would be removed from agricultural use since the pipeline would be buried well below plow depth and drain tile. The cropland could return to production as soon as construction was completed. The farmer will receive compensation for reduced productivity. All agriculture uses will continue within the new permanent ROW after completion of this project.

Construction may affect appurtenant agriculture items such as drainage systems, fences and livestock. When active tile drainage systems are encountered temporary repairs will be made immediately to allow continuation of flow. A local tile contractor will make permanent repairs prior to the start of restoration activities.

If it is necessary for livestock or farm machinery to cross the open trench, equipment bridges or trench plugs will be strategically located to allow access. The contractor will use appropriate fencing or other means to prevent livestock from falling into open trenches. The above is applicable to both the preferred and alternate building sites.

Terrain and Geology

Little or no impact to the terrain and geology should result from construction, operation or maintenance of the pipeline facilities. No special construction techniques are expected to be necessary because of the terrain or geology. Impacts would be limited to the construction phase.

Little or no grading is anticipated in order to prepare the surface for the construction equipment over the route for either the preferred or alternate site.

Sand and gravel are likely the primary mineral resource occurring along the proposed pipeline route. No active mining operation would be directly affected by the construction of the pipeline.

There are no active faults located across or along the route of the proposed pipeline. Seismic activity in the area has been very limited. Since pipeline damage is usually associated with a large-scale catastrophic seismic event and no such earthquake has been recorded in the project area, the probability of damage to the pipeline due to earthquake is unlikely. Damage to the pipeline due to landslides is also unlikely because the proposed route would be in generally flat terrain.

Soils

The primary effect of pipeline construction on soils is erosion associated with disturbing the vegetative cover and loss of soil productivity due to soil mixing and/or compaction. Mixing of topsoil with sub-soil could affect productivity of cropland.

As stated earlier, if the preferred site were selected, land overlying the ROW would be converted to uses associated with FEP, and removed from agricultural use. If the alternate site were selected, some farmland would be removed from agricultural use temporarily, then returned following construction.

Soil segregation practices eliminate virtually all mixing of topsoil and subsoil. FEP will employ topsoil segregation methods in annually cultivated or rotated agricultural lands if the alternate site is selected. The contractor will use double ditching techniques that involve removing the top soil first to a stockpile along the outer edge of the easement. Then a second excavation will remove the sub-soil to a stockpile adjacent to the top soil. After installing the pipe, the contractor replaces the subsoil first and then the top soil such as to maintain soil segregation. FEP will suspend construction activity on the ROW when conditions such as wet weather were conducive to soil compaction.

Chisel or other type plowing, and/or other measures, during restoration of the affected area will mitigate soil compaction. Temporary and permanent erosion control measures will be employed during construction to minimize erosion caused by water and wind.

Soil loss by wind could likely occur when the ROW area is very dry after the vegetative cover has been removed. During construction, activity would be limited when there was enough wind to cause erosion. It is typical to control dust during the construction phase with water applied by spray bars mounted on trucks equipped with water tanks. Excessive dust is detrimental to construction activities and is controlled diligently to avoid loss of production and to promote safety. After construction, restoration of the ROW in non-cropland areas includes seeding and mulching that helps prevent further dust omissions. Impact to soils would be short term.

Water

Groundwater

Construction of the proposed pipeline may cause minor impact on groundwater flow in localized areas, but would not affect overall groundwater recharge in the project area. Near surface groundwater is not a major source of drinking water in the area. Construction equipment could also cause compaction of soils, resulting in locally reduced water infiltration rates.

The pipeline trench would generally be approximately 5 feet deep and would not intersect aquifers. In low-lying areas, de-watering of the trench may be required and could temporarily affect groundwater levels in the immediate vicinity of the trench.

Effects on groundwater would be short term. Construction of the proposed pipeline would not require the installation or abandonment of any water wells or connection to or changes in any public water supply. There are no wells currently within 2,000 feet of the proposed pipeline.

Refueling of vehicles, or the transportation and storage of fuel, oil and other hazardous liquids could create a contamination hazard to aquifers. Accidental spills or leaks of hazardous liquids could contaminate soil and groundwater. Contaminated soils could continue to leach pollutants to the groundwater for an extended period after the spill or leak. FEP will prohibit refueling activities and storage of hazardous liquids within at least a 200-foot radius of all private wells and at least a 400-foot radius of all municipal or community water supply wells.

Surface Water

The pipeline will not cross any major streams or large bodies of water. Accordingly, the risk of damage resulting from activities associated with this project is negligible. FEP proposes to cross a agricultural drainage ditch using common construction techniques in compliance with applicable regulatory requirements. Therefore, risk of contamination to surface waters is negligible.

Hay bales or other appropriate materials will be used to contain any inadvertent releases of drilling fluids. The contractor will use vacuum or sump pumps to clean up and transfer the drilling fluids back to the entry or exit points of the drilling mud pits for either reprocessing or disposal.

Prior to placing the pipeline in service, the contractor will hydrostatically test the pipeline. As the contractor would obtain hydro-test water from local municipalities or on-site wells, the test would not affect local wildlife.

No chemicals would be added to the hydrostatic test water. The water would be tested during withdrawal, after the pipeline is filled, and during discharge. Discharge would be to local drainage pathways or other locations in accordance with applicable regulatory requirements. If discharge went into a receiving stream, the discharge rate would be regulated and splash plates or other similar devices installed to disperse the discharge to prevent erosion, streambed scour, suspension of sediments, or excessive stream flow. FEP may obtain a discharge permit from the Minnesota Pollution Control Agency, or may elect to transport hydrotest water to a licensed off-site facility for disposal. Any effects would be minimal and short term.

Vegetation and Wildlife

Vegetation

The vegetation located around the potential project area is primarily that of both a native prairie land and a deciduous, Maple-Basswood forest. Side-oats gramma, grayhead coneflower, purple coneflower, rough blazing star, and big blue stem are common native prairie species. Some of the species found within the deciduous forest are sugar maple, red oak, basswood, and oak, and a few underlying shrubs.

Wildlife

Due to the fact that the land is already disturbed by agricultural activities and that the MDNR did not identify any state or federally listed threatened or endangered species at the site or within a one-mile radius of the site, the project will not have a significant impact upon the species present in the project area.

Little, if any, wildlife habitat will be permanently lost. All wildlife species that may be displaced are considered "common" in Minnesota, and their displacement would not be detrimental to their populations.

Special Areas

The MDNR was contacted to review the Natural Heritage database to determine if any rare plant or animal species or other significant natural feature might be impacted by the proposed project. None were identified.

Surface Water Runoff

FEP will cross one agricultural drainage ditch on the site; impacts to the surface waters are negligible. Stormwater during construction will be managed in accordance with applicable regulatory requirements.

ROW Protection and Restoration

Protection

FEP will comply with the requirements of regulatory and permitting agencies such as the Army Corps of Engineers, MDNR and other agencies that may include conditions with permits. For the preferred site the entire route is located on FEP property. The landowner will participate in developing the measures taken to mitigate any impacts during construction or operation of the pipeline for that part of the property not on the FEP property at the alternate site.

Restoration

Minnesota Rules Section 4415.0195 allows certain construction related activities such as tile repair, soil segregation, livestock and crop protection, repair to private roads and fence and gate repair or replacement to be negotiated with the landowner. At the preferred site, the pipeline will be entirely on property owned by FEP and there will be no agricultural restoration requirements. For that portion of the property disturbed by construction at the alternate site, FEP would generally not initiate negotiations for these tasks but would expect to perform them with contractor personnel. One restoration item that is traditionally negotiated with landowners is reseeded of non-cropland areas such as pastureland. The Minnesota Environmental Quality Board will attach the following conditions to the routing permit as per the above-mentioned MN 4415.0195 relative to ROW preparation, construction, clean up, and restoration:

- A. The Company shall comply with all applicable state rules and regulations.
- B. The Company shall clear the ROW only to the extent necessary to assure suitable access for construction, safe operation, and maintenance of the pipeline.
- C. Stream banks disturbed by pipeline construction must be stabilized using native plant species indigenous to the project area, or by other methods as required by applicable state and/or federal permits.
- D. Precautions shall be taken to protect and segregate topsoil in cultivated lands unless otherwise negotiated with the affected Landowner.
- E. Compaction of cultivated lands by the Company must be kept to a minimum and confined to as small an area as practicable.
- F. Precautions to protect livestock and crops must be taken by the Company unless otherwise negotiated with the affected Landowner.
- G. All appropriate precautions to protect against pollution of the environment must be taken by the Company.
- H. All waste and scrap that is the product of the pipeline construction process must be removed or properly disposed of before construction ends.
- I. Clean up of personal litter, bottles, and paper deposited by ROW preparation and construction crews must be done on a daily basis.
- J. The Company shall repair or replace all drainage tiles broken or damaged during ROW preparation, construction and maintenance activities, unless otherwise negotiated with the affected Landowner.
- K. The Company shall repair all private roads and lands damaged when moving equipment or when obtaining access to the ROW, unless otherwise negotiated with the affected Landowner.
- L. The Company shall repair and replace all fences and gates removed or damaged as a result of ROW preparation, construction, and maintenance activities, unless otherwise negotiated with the affected Landowner.

- M. Shelterbelts and trees must be protected by the Company to the extent possible in a manner compatible with the safe operation, maintenance and inspection of the pipeline. MnSP proposes to directionally drill under shelterbelts and trees affected by the construction.
- N. The Company shall, to the extent possible, restore the area affected by the pipeline to the natural conditions that existed immediately before construction of the pipeline. Restoration must be compatible with the safe operation, maintenance, and inspection of the pipeline.

Operations and Maintenance

Pipeline operations and maintenance are assumed to be in compliance with all applicable state and federal rules or regulations, unless determined otherwise by the state or federal agency having jurisdiction over the enforcement of such rules or regulations. For public information purposes, the applicant must provide a general description of the anticipated operation and maintenance practices planned for the proposed pipeline. The pipeline is jurisdictional to the Minnesota Office of Pipeline Safety (MNOPS). All facilities proposed for the FEP pipeline project would be designed, operated and maintained in accordance with DOT Minimum Federal Safety Standards in Title 49 of the CFR, Part 192 (49 CFR 192). These regulations are meant to ensure adequate protection for the public from failures of natural gas pipeline and related facilities. Part 192 defines and specifies the minimum standards for operating and maintaining pipeline facilities including the establishment of an Emergency Plan, which provides written procedures to minimize hazards from a gas pipeline emergency. Key elements of the plan include procedures for:

- Receiving, identifying, and classifying emergency events – gas leakage, fires, explosions and natural disasters;
- Establishing and maintaining communications with local fire, police and public officials, and coordinating emergency responses;
- Making personnel, equipment, tools and materials available at the scene of an emergency;
- Protecting people first and then property, and making them safe from actual or potential hazards; and,
- Emergency shutdown of the system and safely restoring service.

The safety standards specified in Part 192 require each pipeline operator to:

- Develop an emergency plan, working with local fire departments and other agencies to identify personnel to be contacted, equipment to be mobilized, and procedures to be followed to respond to a hazardous condition caused by the pipeline or associated facilities;
- Establish and maintain a liaison with the appropriate fire, police and public officials in order to coordinate mutual assistance when responding to emergencies;
- Establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a natural gas pipeline emergency and report it to appropriate public officials;

- Use only qualified personnel to operate and maintain the pipeline in accordance with an Operator Qualification Plan;
- Have, maintain and implement a Pipeline Integrity Management Plan for transmission lines in High Consequence areas; and,
- Ensure that personnel working on these facilities are part of a random drug testing program.

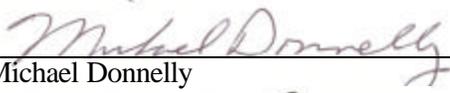
Before placing the pipeline in service, FEP will prepare a procedure manual for operation and maintenance and emergencies to include the pipeline facilities of the proposed new pipeline. FEP will operate its pipeline facilities in compliance with applicable pipeline safety regulations and FEP will inspect and maintain its pipeline facilities in compliance with MNOPS regulations. FEP will become a member of the Gopher State Excavators One-Call system that is vital in helping to prevent damage to underground pipelines by excavators and others performing underground construction. Semi-annual inspections of the pipeline ROW would be conducted for gas leak detection and cathodic protection surveys would be conducted annually.

List of Government Agencies and Permits

The following list indicates all of the known government agencies or authorities and the titles of permits they issue that may be required for the proposed pipeline project.

- Minnesota Environmental Quality Board Partial Exemption of Routing Permit, March 2004 Application Submitted
- Minnesota Department of Natural Resources, License to Cross Public Waters
- Minnesota Department of Natural Resources, Temporary Water Appropriation
- Minnesota Department of Natural Resources, State Endangered Resources Consultation, Complete NPDES Discharge Permit for Hydrostatic Testing Water NPDES General Storm Water Permit for Construction Activity
- Minnesota Historical Society Project Review – Cultural Resources (complete)
- Minnesota Department of Transportation Utility Permits Road and Ditch Crossing Permits
- United State Army Corps of Engineers 404/404 Permits if applicable
- Conditional Use Permit and Building Permits issued by the City of Faribault, MN

Respectfully submitted,
Stanley Consultants, Inc.

Prepared by 
Michael Donnelly

Reviewed by 
Mick Durham

Applicant
Representative 
James Larson

cc: Files - 16245.16

Appendix A

Material Safety Data Sheet

MATERIAL SAFETY DATA SHEET

Natural Gas

Enron Gas Pipeline Group
333 Clay Street, 3AC-3115
Houston, Texas 77002

Company Contact: Operations Communication Center - (402) 398-7773

Emergency Contact: Chemtrec - (800) 424-9300

SECTION #1 - IDENTIFICATION

Product: Natural Gas
CAS Number: 74-82-8
Chemical Family: Aliphatic Hydrocarbon, Alkane Series
Synonyms: Methane, Fuel Gas, Marsh Gas

SECTION #2 - HAZARDOUS CHEMICAL COMPONENTS

Table with 4 columns: %, Material, CAS#, Exposure Limit. Rows include Methane (> 90%), Ethane (< 5%), and Propane (< 1%) with their respective exposure limits.

This product is hazardous according to OSHA, 29 CFR 1910.1200. This product normally contains no hazardous components, other than ethane, as defined in OSHA 29 CFR §1910.1200 (i.e., greater than 1%). This product may contain small amounts of heavier hydrocarbons. This product and/or components present at concentrations greater than 0.1% are not carcinogenic according to OSHA, IARC, or NTP. This components of this product normally are within the ranges listed above, however, depending on the geographical source, gas composition may vary.

SECTION #3 - PHYSICAL DATA

Boiling Point: -259 F, 162 C
Vapor Pressure: N/A - Gas
Vapor Density (Air = 1): 0.6
Specific Gravity: N/A - Gas
Solubility (H2O): Very slightly soluble
Evaporation Rate: Gas at normal ambient conditions
Appearance: Colorless gas at normal temperature
Odor: Odorless
If an odorant has been added by the local utility company, then an unpleasant smell resembling that of a rotten egg or garlic.

SECTION #4 - FIRE FIGHTING & EXPLOSION DATA
--

Flash Point:	306 F, 187.8 C
Autoignition:	1004 F, 540 C
Flammable Limits in Air:	5% (lower) 15% (upper)
Unusual Fire and Explosion Hazards:	This gas is extremely flammable and forms flammable mixtures with air. It will burn in the open or be explosive in confined spaces. Its vapors are lighter than air and will disperse. A hazard of re-ignition or explosion exists if flame is extinguished without stopping the flow of gas.
Extinguishing Media:	Dry chemical, CO ₂ , or halon. Water can be used to cool the fire but may not extinguish the fire.
Special Fire Fighting Instructions:	Evacuate the area upwind of vapors. Stop gas flow and extinguish fire. If gas source cannot be shut off immediately, all equipment and surfaces exposed to the fire should be cooled with water to prevent overheating and explosions. Control fire until gas supply can be shut off.

SECTION #5 - HEALTH HAZARD DATA
--

Exposure Limits:	See Section # 2.
Effects of Single Overexposure:	
Swallowing:	This product is a gas at normal temperature/pressure. No potential for ingestion expected. Solid and liquefied forms of this material and pressurized gas can cause freeze burns.
Skin Absorption:	This material is not expected to be absorbed through the skin. Solid and liquefied forms of this material and pressurized gas can cause freeze burns.
Inhalation:	Exposure may produce rapid breathing, headache, dizziness, visual disturbances, muscular weakness, tremors, narcosis, unconsciousness, and death, depending on the concentration and duration of exposure.
Skin Contact:	Non-irritating; but solid and liquid forms of this material and pressurized gas can cause frostbite, blisters and redness.
Eye Contact:	This gas is non-irritating; but direct contact with liquefied/pressurized gas or frost particles may produce severe and possible permanent eye damage from freeze burns.
Effects of Repeated Overexposure:	
Medical Conditions Aggravated by Overexposure:	Personnel with pre-existing chronic respiratory diseases should avoid exposure to this material.
Emergency and First Aid Procedures:	
Swallowing:	This product is a gas at normal temperature/pressure and not expected to present a swallowing hazard.

SECTION #5 - HEALTH HAZARD DATA - (continued)

Skin:	Frozen tissues should be flooded or soaked with warm water. DO NOT USE HOT WATER. Cryogenic burns which result in blistering or deeper tissue freezing should be promptly seen by a doctor.
Inhalation:	Immediately move personnel to area of fresh air. For respiratory distress, give air, oxygen, or administer CPR (Cardiopulmonary Resuscitation) if necessary. Obtain medical attention if breathing difficulties continue.
Eyes:	Vapors are not expected to present an eye irritation hazard. If contacted by liquid/solid, immediately flush the eye(s) gently with warm water for at least 15 minutes. Seek medical attention if pain or redness persists.

SECTION #6 - REACTIVITY & POLYMERIZATION

Stability:	Stable
Conditions to Avoid:	High heat, open flames and other sources of ignition. Explosive reactions can occur between natural gas and oxidizing agents. Spontaneous ignition with chlorine dioxide.
Incompatibility (materials to avoid):	Barium peroxide, chlorine dioxide and strong oxidizing agents.
Hazardous Combustion or Decomposition Products:	Combustion may produce carbon monoxide, carbon dioxide and other harmful substances.
Hazardous Polymerization:	None

SECTION #7 - SPILL, LEAK, & DISPOSAL PROCEDURES

Steps to be Taken in the Event of Spills, Leaks, or Release:	Eliminate all potential sources of ignition. Handling equipment and tools must be grounded to prevent sparking. Evacuate all non-essential personnel to an area upwind. Equip responders with proper protection equipment (as specified in Section # 8) and advise of hazardous. Stop sources of release with non-sparking tools before attempting to put out any fire. Ventilate enclosed areas to prevent formation of flammable or oxygen-deficient atmospheres. Water spray may be used to cool equipment or reduce vapors.
Waste Disposal Procedures:	Disposal of this containerized gas may be disposal of a hazardous waste. Disposal should be made in accordance with all applicable federal, state, and local laws and regulations.

SECTION # 8 - SPECIAL PROTECTION MEASURES

Ventilation:	Local exhaust and general room ventilation may both be essential in work areas to prevent accumulation of explosive mixtures. If mechanical ventilation is used, electrical equipment must meet National Electric Code requirements.
--------------	--

SECTION # 8 - SPECIAL PROTECTION MEASURES- (continued)

Eye Protection:	Use chemical-type goggles and face shields when handling liquefied gases. Safety glasses and/or face shields are recommended when handling high-pressure cylinders and piping systems or whenever vapors are discharged.
Skin Protection:	If there is a potential for contact with high concentrations of compressed gas, use insulated, impervious plastic or neoprene-coated canvas gloves and protective gear (apron, face shield, etc.) to protect hands and other skin areas.
Respiratory Protection:	For excessive gas concentrations, use only NIOSH/MSHA approved, self-contained breathing apparatus.
Work/Hygiene Practices:	Emergency eye wash fountains and safety showers for first aid treatment of potential freeze burns should be available in the vicinity of any significant exposure from compressed gas release. Personnel should not enter areas where the atmosphere is below 19.5 vol. % oxygen without special procedures/equipment. Respirator use should comply with OSHA 29 CFR 1910.134 or equivalent.

SECTION #9 - SPECIAL PRECAUTIONS - STORAGE & HANDLING

Storage and Handling Conditions:	Store and use cylinders and tanks in well-ventilated areas, away from heat and sources of ignition. No smoking near storage or use. Follow standard procedures for handling cylinders, tanks, and loading/unloading. See NFPA #58 and API 2510. Fixed storage containers must be grounded and bonded during transfer of product.
Naturally Occurring Radioactive Material (NORM):	This product may contain Naturally Occurring Radioactive Material (NORM) and customers should be aware of the potential for NORM within their processing system. The actual concentration of NORM in the product is dependent on the geographical source of the natural gas and storage time prior to its delivery. Process equipment (e.g., lines, filters, pumps and reaction units) may accumulate radioactive daughters and emit gamma radiation during operation. Equipment emitting gamma radiation may be presumed to be internally contaminated with alpha-emitting decay products which may be a hazard if inhaled or ingested. Consult applicable NORM regulations for worker protection guidelines and handling requirements before initiating maintenance operations which require opening contaminated equipment.

SECTION #10 - SHIPPING INFORMATION

Proper Shipping Name:	Methane, Compressed
Hazard Class:	2.1
DOT Identification Number:	UN1971
DOT Shipping Label:	Flammable Gas (red)

SECTION #11 - REGULATORY INFORMATION

Any spill or uncontrolled release of this product, including any substantial threat of release, may be subject to state and federal reporting requirements. Consult those regulations applicable to your facility or operation.

Federal Clean Water Act:

Any spill or release of liquid oils associated with this product into “navigable waters” (essentially any surface water, including certain wetlands) or adjoining shorelines sufficient to cause a visible sheen or deposit a sludge or emulsion must be reported immediately to the National Response Center (1-800-424-8802). Also contact appropriate state and local regulatory agencies as required.

CERCLA Section 103:

The Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA) requires notification to the National Response Center of a release of quantities of Hazardous Substances equal to or greater than the reportable quantities in 40 CFR §302.4. The CERCLA definition of hazardous substances contains a “petroleum exclusion” clause which exempts natural gas, natural gas liquids and any indigenous components of such (e.g., benzene) from the CERCLA Section 103 reporting requirements.

EPCRA Section 304:

The Emergency Planning and Community Right-to-Know Act (EPCRA) requires emergency planning based on Threshold Planning Quantities and release reporting based on reportable quantities in 40 CFR §355. There are no known components present in this product that would require reporting under this statute.

EPCRA Sections 311/312:

The Emergency Planning and Community Right-to-Know Act (EPCRA) requires notification and annual reporting of materials for which maintenance of an MSDS is required. This product is classified under the following hazard categories: Immediate (acute) Health Hazard and Fire Hazard.

EPCRA Section 313:

The Emergency Planning and Community Right-to-Know Act (EPCRA) requires submission of annual reports of the release of toxic chemicals that appear in 40 CFR §372. This product contains no chemicals subject to reporting requirements under this statute.

Toxic Substances Control (TSCA) Status:

The ingredients of this product are on the TSCA inventory.

DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

This information relates only to the material designed and may not be valid for such material used in combination with other materials or in any process. Such information is to the best of this Company's knowledge believed accurate and reliable as of the date indicated. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use.

Appendix B

Wetland Screening Report

Wetland Delineation

MMPA Power Generation Facility

Faribault, Minnesota

Minnesota Municipal Power Agency

October 2002



Stanley Consultants INC.

A Stanley Group Company
Engineering, Environmental and Construction Services - Worldwide

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Section 1

Introduction

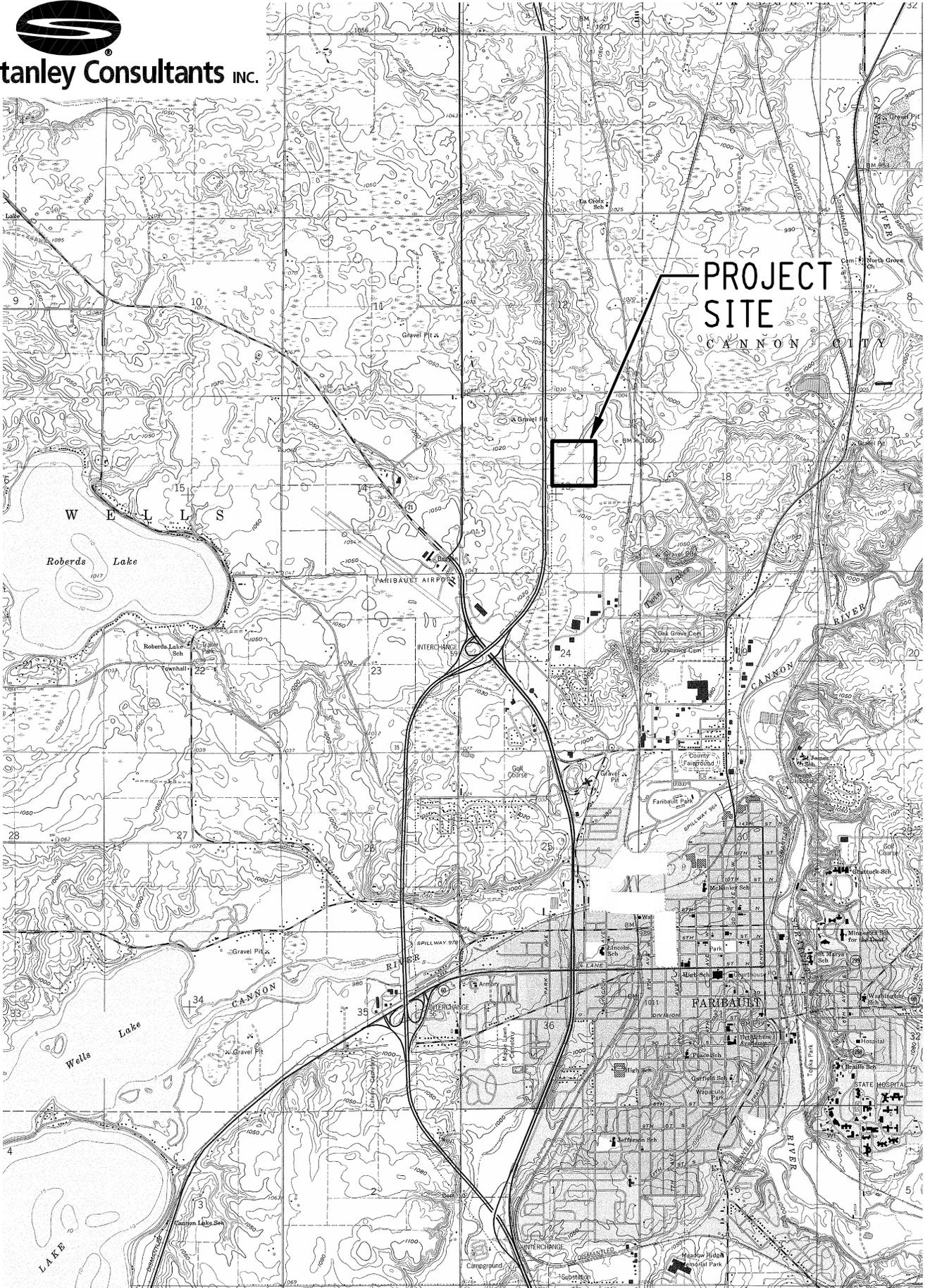
Background

Stanley Consultants, Inc. was retained by Minnesota Municipal Power Agency to conduct a wetland delineation on an approximately 37-acre site of a future power generating facility. The project site (see Figure 1-1) is located just north of Faribault, Minnesota, in Rice County.

Minnesota Municipal Power Agency is interested in delineating wetlands that may be disturbed or impacted by the future project so proper permitting and mitigation may be accomplished. Stanley Consultants' personnel visited the site on July 26 and 23 and September 13 and 26, 2002, and performed a wetlands evaluation in accordance with the United States Army Corps of Engineers (USACE) Wetlands Delineation manual (1987), and performed research as directed by that guidance. The results of this evaluation are contained within this report.



Stanley Consultants INC.



PROJECT
SITE
CANNON CITY

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CADD A2-R4 © STANLEY CONSULTANTS

Vicinity Map
Figure 1-1

Regulatory and Technical Background

General

Recognizing the potential for continued or accelerated degradation of the Nation's waters, the US Congress enacted the Clean Water Act (hereafter referred to as the Act), formerly known as the Federal Water Pollution Control Act (33 U.S.C. 1344). The objective of the Act is to maintain and restore the chemical, physical, and biological integrity of the waters of the United States. Section 404 of the Act authorizes the Secretary of the Army, acting through the Chief of Engineers, to issue permits for the discharge of dredged or fill material into the waters of the United States, including wetlands.

The following definition, diagnostic environmental characteristics, and technical approach comprise a guideline for the identification and delineation of wetlands:

The USACE (Federal Register, 1982) and the Environmental Protection Agency (Federal Register, 1980) jointly define wetlands as: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Wetlands Diagnostic Environmental Characteristics

Wetlands have the following general diagnostic environmental characteristics:

- **Vegetation.** The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described in wetlands. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptations, have the ability to grow, effectively compete, reproduce, and/or persist in anaerobic soil conditions. Some species (e.g. *Acer rubrum*) having broad ecological tolerances occur in both wetlands and non-wetlands.

- Soil. Soils are present and have been classified as hydric or they possess characteristics that are associated with reducing soil conditions.
- Hydrology. The area is inundated either permanently or periodically at mean water depths <6.6 feet or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation. The period of inundation or soil saturation varies according to the hydrologic/soil moisture regime and occurs in both tidal and non-tidal situations.

Except in certain situations defined in the USACE manual, evidence of a minimum of one positive wetland indicator from each parameter (vegetation, hydrology, and soil) must be found in order to make a positive wetland determination.

Non-wetlands Diagnostic Environmental Characteristics

The following definition, diagnostic environmental characteristics and technical approach comprise a guideline for the identification and delineation of non-wetlands: Non-wetlands include upland and lowland areas that are neither deepwater aquatic habitats, wetlands, nor other special aquatic sites. They are seldom or never inundated, or if frequently inundated, they have saturated soils for only brief periods during the growing season, if vegetated, and, they normally support a prevalence of vegetation typically adapted for life only in aerobic soil conditions.

Non-wetlands have the following general diagnostic environmental characteristics:

- Vegetation. The prevalent vegetation consists of plant species that are typically adapted for life only in aerobic soils. These mesophytic and/or xerophytic macrophytes cannot persist in predominantly anaerobic soil conditions. Some species, due to their broad ecological tolerances, occur in both wetlands and non-wetlands (e.g. *Acer rubrum*).
- Soil. Soils, when present, are not classified as hydric, and possess characteristics associated with aerobic conditions.
- Hydrology. Although the soil may be inundated or saturated by surface water or ground water periodically during the growing season of the prevalent vegetation, the average annual duration of inundation or soil saturation does not preclude the occurrence of plant species typically adapted for life in aerobic soil conditions.

When any one of the diagnostic characteristics identified above is present, the area is a non-wetland.

Prior Converted Cropland

Prior converted croplands (PC) are wetlands that were drained, dredged, filled, leveled, or otherwise manipulated, including the removal of woody vegetation, before December 23, 1985, to make production of an agricultural commodity possible, and that:

- Do not meet specific hydrologic criteria.
- Have had an agricultural commodity planted or produced at least once prior to December 23, 1985.
- Have not since been abandoned.

Activities in prior converted cropland are not regulated under Section 404. If prior converted cropland is not planted to an agricultural commodity for more than five consecutive years and wetland characteristics return, the cropland is considered abandoned and then becomes a wetland subject to regulation under Section 404.

Prior converted croplands generally have been subject to such extensive and relatively permanent physical hydrological modifications and alteration of hydrophytic vegetation that the resultant cropland constitutes the "normal circumstances" for purposes of Section 404 jurisdiction. Consequently, the "normal circumstances" of prior converted croplands generally do not support a "prevalence of hydrophytic vegetation" and as such are not subject to regulation under Section 404. In addition, our experience and professional judgment lead us to conclude that because of the magnitude of hydrological alterations that have most often occurred on prior converted cropland, such cropland meets, minimally if at all, the Manual's hydrology criteria.

Site Information

Site Description

The parcel of land on which the future project will be located is in the southwest ¼ of the northeast ¼ of Section 13, Township 110N, Range 21W in Rice County, Minnesota. A vicinity map showing the location of the site is presented in Figure 1-1. Approximately 37 acres of land is included within the scope of the delineation as shown on Figure 3-1.

Except where drainageways are present, the entire parcel was actively farmed in 2002 with row crops (corn and soy beans). Crops have been planted generally from fence row to fence row.

Area Hydrology

The site is relatively flat with a deep drainageway that enters the site from the west at the outlet end of an 84"x60" CMP culvert pipe under I-35, passes through the site, and exits the site in the northeast corner. This drainageway is tributary to the Cannon River. Other minor drainageways are present and flow into the main drainageway. They include one along a portion of the south and west property lines and another in the northwest portion of the site. A low rise aligned north and south is present along the eastern side of the site with a slight down grade to the west towards the deep drainageway that flows northeasterly through the site. Land adjacent to the southern edge of the property is lower with depression areas observed. It appears some surface runoff occurs from the adjacent property into the drainageway along the south property line.

The main drainageway appears to have at least semi-permanent water in it since minnows and frogs were observed. The drainageway through the site is uniform in shape with a bottom width of about 9 feet and a top width of about 24 to 26 feet. It is approximately 5 feet deep near the west property line and 4 feet deep near the north property line. A 20-foot long 5-foot diameter riveted steel culvert provides a drainageway crossing for farm equipment at the north property line. The appearance of the drainageway combined with inspection of historical aerial photographs indicates that the drainageway was channelized sometime in the past.



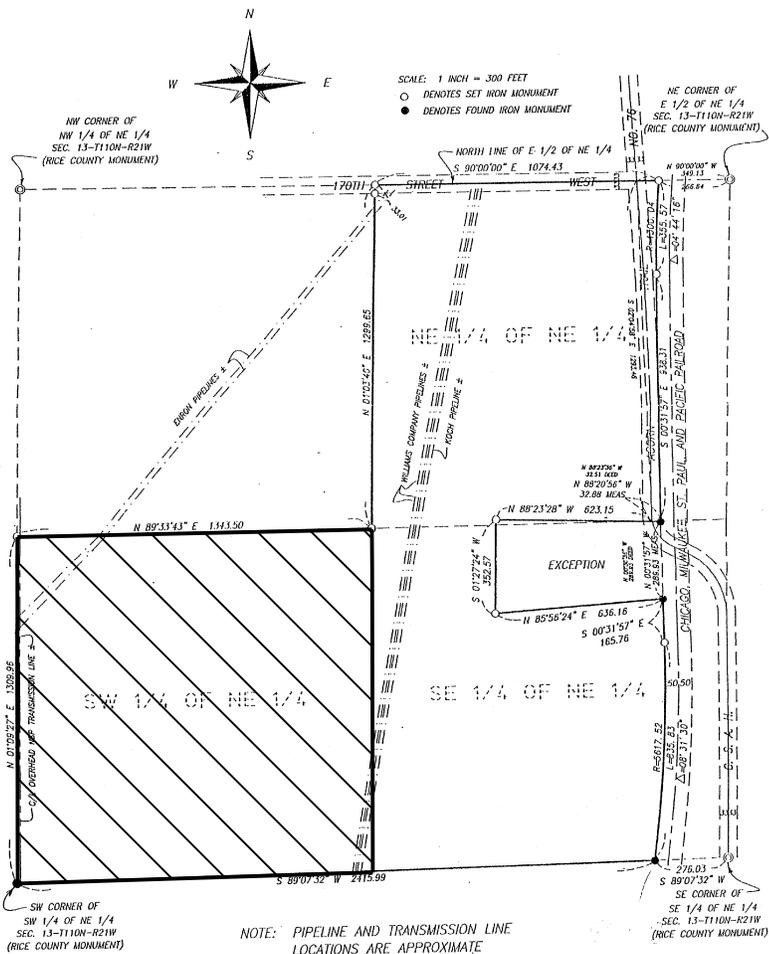
Stanley Consultants INC.

Certificate for:
Donald Schulz
16812 Acorn Trail
Faribault, MN 55021

RAPP LAND SURVEYING
David G. Rapp
Registered Land Surveyor

Bk: 12/70
D0160

45967 Hwy. 56 Blvd. Canyon, MN 55046 507-789-5366
SURVEYOR'S CERTIFICATE



NOTE: PIPELINE AND TRANSMISSION LINE
LOCATIONS ARE APPROXIMATE

PLEASE SEE ATTACHED SHEET
FOR LEGAL DESCRIPTION

I hereby certify that this survey, plan, or report was prepared by
me or under my direct supervision and that I am a duly Reg-
istered Land Surveyor under the laws of the State of Minnesota.
Dated June 4, 2001

Reduction



David G. Rapp
Minnesota Registration No. 22044

Subject Property
Figure 3-1

q:\16245\dgn\Fig_3-1.dgn
CADD A2-R4 © STANLEY CONSULTANTS

According to the landowner some of the ground is tiled. One specific tile location was identified.

Soils

Figure 3-2 shows soil classifications for the subject property. Soil types found on the site are presented on Table 3-1. Hydric soils, including Cordova clay loam (Map Symbol 109), Glencoe clay loam (Map Symbol 114) and Hamel loam (Map Symbol 414), are located on the property and occupy the low areas and depressions.

Table 3-1 Soils on Subject Property

Map Symbol	Soil Name	Slope Percent	Comment	Hydric
104B	Hayden Loam	2-6	Well drained	No
104C2	Hayden Loam	6-12	Well drained	No
109	Cordova Clay Loam	0-2	Poorly drained	Yes
114	Glencoe Clay Loam	0-1	Very poorly drained	Yes
414	Hamel Loam	1-3	Poorly drained	Yes
1361	LeSueur Loam	1-3	Moderately well drained	No

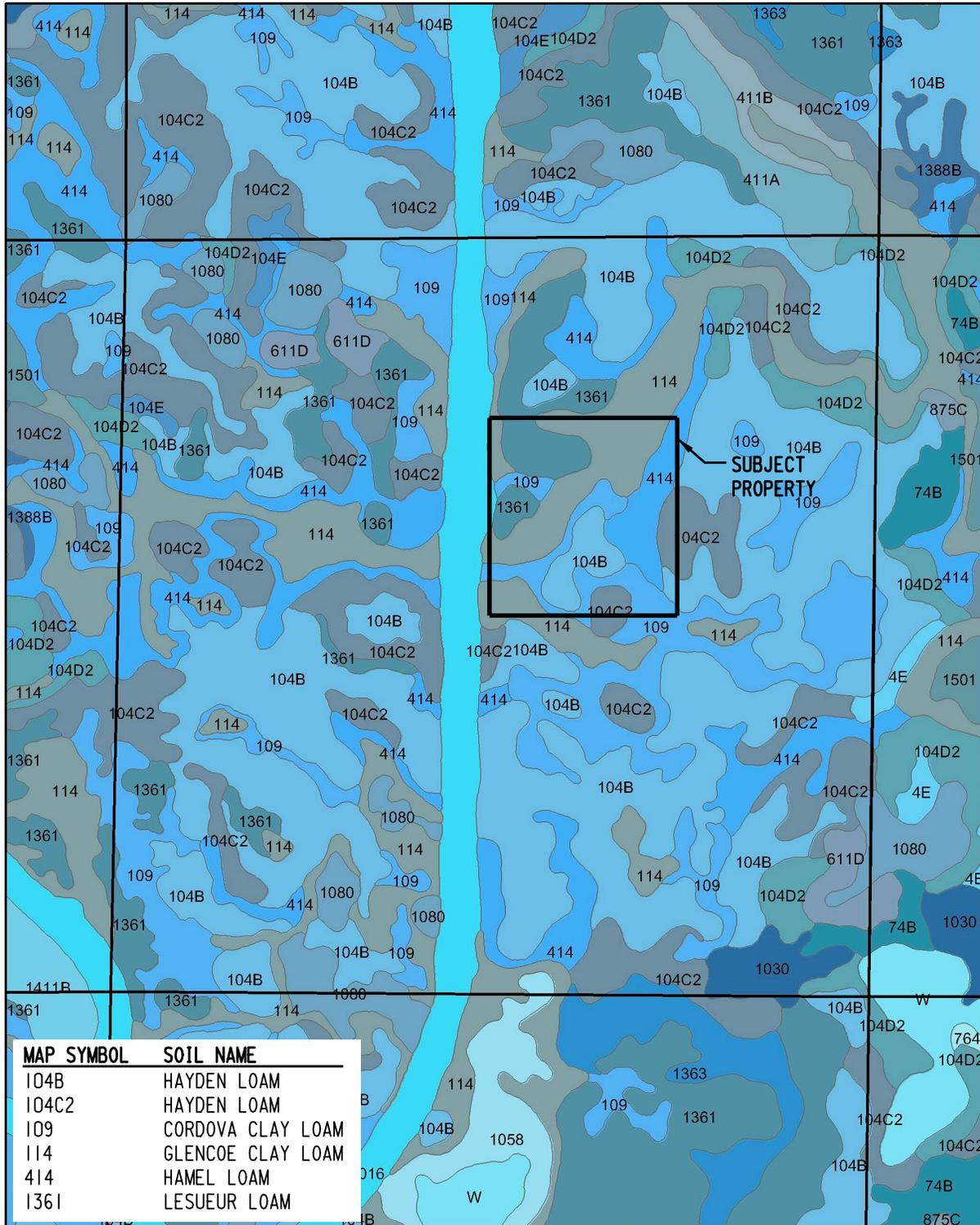
Source: Soil Survey of Rice County, Minnesota, U.S. Department of Agriculture, Natural Resources Conservation Service, 2000 and Rice County Update, Minnesota, Comprehensive Hydric Soils List, U.S. Department of Agriculture, Natural Resources Conservation Service, 2000

National Wetlands Inventory (NWI) Map

The National Wetlands Inventory (NWI) Map, prepared by the U.S. Fish and Wildlife Services (FWS) is presented on Figure 3-3 for the subject property. The NWI map does not recognize any identified wetlands.

The NWI map was developed on 1960 USGS topographic base mapping. The I-35 corridor, which establishes the western boundary of the site, does not appear on this map. A Palustrine emergent, seasonal partially drained/ditched (PEMCD) wetland is located in the vicinity of the I-35 corridor. The location of this wetland may be coincident with Wetland A that was delineated as part of this work and described later in this report.

Soil Survey Map Units T110N, R21N, Section 13 Rice County, Minnesota



0 500 1,000 2,000 Feet



**Soil Types
Figure 3-2**

Wetlands Delineation

Wetlands Delineation

Several wetland areas were found within the subject property. Three areas are associated with small depressions in hydric soil. Three wetland areas are associated with the drainageways that are described in Section 3. Delineated wetland locations are shown on Figure 4-1. The field data sheets are provided in Exhibit A. Representative photographs of the wetland areas are presented in Exhibit B.

Wetland No. A

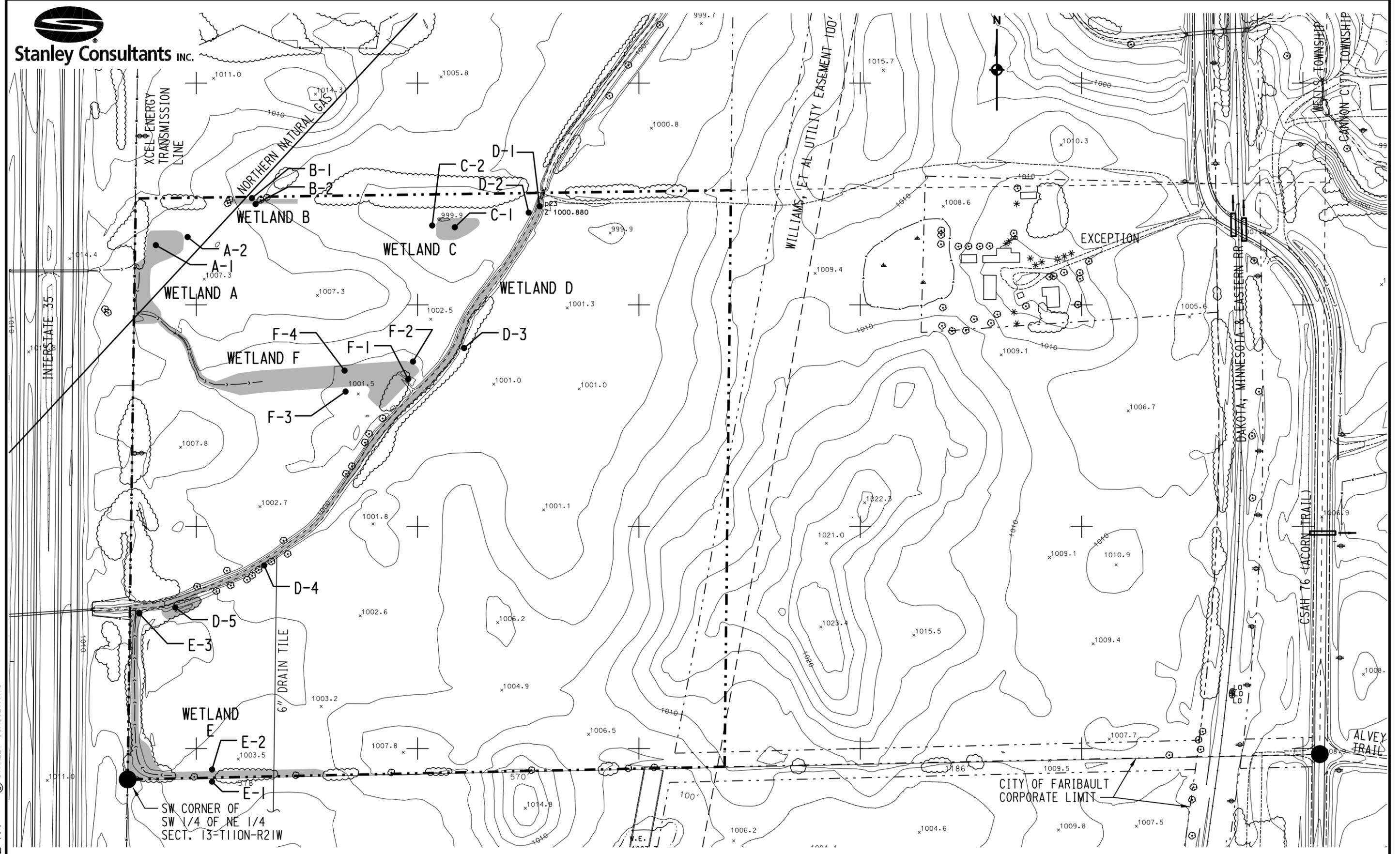
Wetland No. A (see Figure 4-1) is located in a depression in the northwest corner of the site. The western end of the depression is partially defined by the I-35 right-of-way fence line and vegetation. However, the southwestern portion of the basin extends south into a shallow swale and west into the I-35 right-of-way. The portion of the wetland within the project boundaries is approximately 5600 square feet (0.13 acres).

The wetland is located in a cultivated field planted in corn. No corn is present in the depression, but corn surrounds the depression on three sides. A 10-foot wide ring of cocklebur (*Xanthium strumarium*) with some smartweed (*Polygonum amphibium*) and pigweed (*Amaranthus* sp.) is located inside the corn with the plant species transitioning to a stand of immature unknown grass in the center of the depression.

The soil found in the depression matches the Glencoe clay loam mapping unit. The soil at Data Point A-1 exhibits low chroma color, which indicates the presence of hydric soils. Glencoe clay loam is also listed as a hydric soil in the Rice County hydric soil list. Soil on higher ground outside the perimeter of the depression changes to LeSueur loam mapping series. The soil at Data Point A-2 located where the corn begins is a dry sandy silt with cobbles in the upper four inches. The soil was too hard to penetrate deeper.



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q:\16245\dgn\Fig_4-1.dgn
CADD B2-R4 © STANLEY CONSULTANTS

**Delineated Wetland Locations
Figure 4-1**

Using the Classification of Wetlands and Deep Water Habitats of the United States, this farmed wetland comprises approximately 11,400 square feet (0.26 acres) and can be classified by the Cowardin system as a palustrine wetland with emergent vegetation subject to temporary inundation (PEMA). This corresponds to a Type 1 wetland based on the U.S. Fish and Wildlife Service (USFWS) Circular 39 classification system.

Wetland No. B

Wetland No. B (see Figure 4-1) is located in a depression area at the bottom of the north and south facing slopes that straddles the north property line. The depression is not currently cultivated and does not show evidence of cultivation, at least in recent years. Only a small portion of the wetland extends into the subject property; as most of it is located on the adjoining property to the north. The area of the wetland south of the property line within the subject property is approximately 1500 square feet (0.03 acres).

The vegetation in this wetland is more diverse and established than at any of the other wetland locations. Since it is not cultivated, several species can be found including Reed canary grass (*Phalaris arundinacea*), fall panicum (*Panicum dichotomiflorum*), slender rush (*Juncus tenuis*) and several other species scattered throughout the wetland. The vegetation changes abruptly along the southern edge of the wetland as a healthy stand of corn is present where cultivation begins. A narrow band of predominantly great ragweed (*Ambrosia trifida*) separates the diverse wetland vegetation from the corn.

Soil in the depression matches the Glencoe clay loam mapping series. This series is listed on the hydric soils list. Soils at Data Point B-1 exhibit low chroma colors further indicating hydric conditions. Soil at Data Point B-2 is dry sandy silt with cobbles as the soil transitions to mapping series LeSueur loam.

The wetland within the subject property can be classified as PEMA by the Cowardin system and Type 1 by the USFWS Circular 39 system.

Wetland No. C

Wetland No. C (see Figure 4-1) is a depression located in a cornfield along the northern edge of the subject property. It has similar characteristics as Wetland No. A. Vegetation in the depression is a monoculture of pigweed (*Amaranthus* sp.). Corn surrounds the depression. According to the landowner, this depression has not been tilled. According to the soils map Glencoe clay loam is found both in the depression and outside of the depression. Soil samples taken at Data Points C-1 and C-2 match the characteristics of the Glencoe mapping series. The wetland area is approximately 3900 square feet (0.09 acres). The area is a farmed wetland and can be classified as a PEMA by the Cowardin system and Type 1 by the USFWS Circular 39.

Wetland No. D

Wetland No. D (see Figure 4-1) comprises a deep drainageway that runs northeasterly across the site. The drainageway appears to have been channelized sometime in the past since it is straight with a uniform cross section. The bottom width is approximately 9 feet and the top width is approximately 24 to 26 feet. The channel ranges from 4 to 5 feet deep. A 20-foot

long, 5-foot diameter riveted steel culvert is located in the drainageway at the north property line providing a farm equipment access across the drainageway. There appears to be permanent to semi-permanent water in the drainageway since minnows and frogs were observed. At the time of the field survey water was flowing to the northeast.

Data Point D-1 shows wetland vegetation and hydrology. The soils appear to be depositional and exhibit an aquic moisture regime. Data Point D-2 taken at the top of the west bank shows that even though wetland vegetation and hydric soil are present, sufficient hydrology indicators are not present to call the area on the top of the bank a wetland. This is supported by similar observations from Data Point D-3 taken at the top of the east bank. Therefore, only the drainageway channel and sideslopes are considered wetland at these locations covering an area of approximately 14,800 square feet (0.34 acres).

At Data Point D4, taken at the top of the east bank, a dense stand of sandbar willow (*Salix exigua*) is located. The soils at this location are heavy silty clay (10YR3/1) from 0 to 8 inches and clay silt (10YR3/1) at a depth greater than 8 inches. This area tends to be slightly lower than the surrounding area so water may collect here longer than other areas along the bank. The area generally defined by the limit of the stand of sandbar willow exhibits wetland characteristics and is included as part of the area calculation for Wetland D. It can be classified as palustrine emergent seasonal and ditched (PEMCD) by the Cowardin system and Type 3 by the USFWS Circular 39 system.

Wetland No. E

Wetland No. E (see Figure 4-1) comprises a shallow manmade drainageway that runs west, then north, along the south and west property lines. Data Point E1 shows that heavy moist silty clay soil is present in the channel. In the upper 20 inches it is dark (10YR2/1) but changes rapidly to a gray (10YR5/1) with oxidized root channels. Hydrophytic vegetation is located in the drainageway as well. At Data Point 2 the soil has transitioned to a drier, but dark, clay silt (10YR2/1) to 16 inches. This data point is on slightly higher ground and vegetation has begun to transition to more upland type species. Water entering the drainageway comes from runoff from the soybean field on the adjoining property to the south with some additional runoff from the soybean field on the subject property. The extent of the wetland at this location is the drainageway with the boundary defined by a change in ground elevation on either side of the channel.

Wetland E continues along the south and west property lines and discharges into the main drainageway at the west property line. At its confluence with the main drainageway, the channel outlet is approximately 2 feet above the bottom of the main drainageway.

The wetland can be classified as PEMAd by the Cowardin system and Type 1 by the USFWS Circular 39 system. The total area of Wetland E is approximately 16,000 square feet (0.37 acres).

Wetland No. F

Wetland No. F (see Figure 4-1) comprises a shallow drainageway that drains Wetland No. A. Its upstream end is narrow (approximately 15 feet) but widens to approximately 50 feet in the

downstream reach. Prior to discharge into the main drainageway, a broad flat area collects water before it is slowly released. A rock letdown structure directs water from the wetland area to the main drainageway. The location of the drainageway wetland is within a cornfield. The drainageway may have been planted with corn, but no corn to very scattered and stunted corn exists. At Data Point F the healthy stand of corn on slightly higher ground transitions quickly to cocklebur (*Xanthium strumarium*), and pigweed (*Amaranthus* sp.) with River Bulrush (*Scirpus fluviatilis*) and Smartweed (*Polygonum amphibrum*) towards the lowest portion of the swale. The soil changes little when samples taken in the corn and the transition area are compared. Samples taken at Data Points F1 and F2 exhibit hydric characteristics with a dark silty clay (10YR2/1) overlaying a gray silty clay (10YR4/1). At Data Point Nos. F-3 and F-4 similar soil characteristics were found but a silty sand layer is present underlying the silty clays at about 20-22 inches in depth. The wetland boundary was located primarily based on change in vegetation and relief along the edge of the drainageway.

The wetland can be classified as PEMAd by the Cowardin system and Type 1 by the USFWS Circular 39 system. The total area for this drainageway wetland (Wetland F) is approximately 27,500 square feet (0.63 acres).

Conclusion

Delineated Wetlands

Six wetland areas were identified and delineated on the site of the future power generating facility. Three of the wetlands are depressions and three are drainageways. The total area for the three depressional wetlands is approximately 0.25 acres. Approximately 1.34 acres is included in the drainageway wetlands.

Development activities affecting these wetlands will require approval from the U.S. Army Corps of Engineers, Natural Resources Conservation Service, Minnesota Department of Natural Resources and/or the Minnesota Board of Water and Soil Resources. In addition, other state and local regulatory agencies may need to approve the proposed development activities.

Wetland Regulation

In most cases altering a wetland typically by draining or filling will require a permit or some type of authorization. In Minnesota, a number of agencies could have jurisdiction over a wetland depending on the circumstances associated with the wetland and proposed project. Agency involvement can occur on a federal, state, or local level and could include the U.S. Army Corps of Engineers, U.S. Department of Agriculture Natural Resources Conservation Service, Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, and the Rice Soil and Water Conservation District.

The Minnesota Wetland Conservation Act specifies ten categories of exempt drain or fill activities where no permit or approval is necessary. Among the exempt status certain agricultural activities are included that impact Type 1 and Type 2 wetlands. Activities in these wetlands include those that were planted with annually seeded crops or were in a crop rotation seeding of pasture grass or legumes in six of the last ten years prior to January 1, 1991.

The Rice Soil and Water Conservation District needs to be contacted for a formal determination on whether a wetland is eligible for regulation or exempt. This process is initiated by filling out a "Minnesota Local/State/Federal Application Form for Water/Wetland Projects." This form will be sent to all wetland regulatory agencies asking if they have jurisdiction over any wetlands in the project area.

Section 6

References

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4. U.S. Department of the Interior, Fish and Wildlife Service, National List of Plant Species That Occur in Wetlands: North Central (Region 3) Biological Report 88 (26.3), May 1988.
5. Cowardin, L., V. Carter, F. Golet and E. LaRoe, 1979, Classification of Wetlands and Deepwater Habitats of the United States, U.S. Department of Interior, Fish and Wildlife Service.
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10. Peterson, Roger Tory and McKenny, Margaret; A Field Guide to Wildflowers of Northeastern and North Central North America; Houghton Mifflin Company; Boston, 1986.
11. Weeds of the North Central States, North Central Cooperative Extension Service, Agricultural Experiment Station, The University of Illinois.
12. Munsell Soil Color Charts, Gretag McBeth, New Windsor, New York, 2000.

Respectfully submitted,
Stanley Consultants, Inc.

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

Signature: _____ Typed or Printed Name: Martin J. Weber, P.E.

Date: October 15, 2002 Reg. No.: 20419

ERS:dll:16245rpt

Appendix A

Data Forms

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>D-3</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Soy Beans		H	---	9. Ribes missouriense		S	?
2. Salix exigua		S	OBL	10. Anemone quinquefolia		H	FAC*
3. Phalaris arundinacea		H	FACW+	11. _____			
4. Rubis strigosus		S	FACW-	12. _____			
5. Ambrosia trifida		H	FAC+	13. _____			
6. Parthenocissus quinquefolia		WV	FAC-	14. _____			
7. Acer negundo		T	FACW-	15. _____			
8. Vitis riparia		WV	FACW-	16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).

Remarks: The species presented above cover an area on the drainageway bank on both sides of the data point from the edge of the cultivated field to the edge of the bank. Species are presented generally in order of occurrence from the soybean field to the drainageway.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches ⁽¹⁾ <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: No hydrology indicators present. ⁽¹⁾ Roots but no oxidized channels.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> (1) No <input type="checkbox"/> (1) >/ 20"
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-20		10YR3/1			Dry silty clay
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks: It is likely that the soil, especially the top 20", is overburden from excavation of the drainageway.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type:				
<ul style="list-style-type: none"> • Cowardin: _____ • USFWS Circular 39: _____ 				
Remarks:				

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u>	Date: <u>9/26/02</u>
Applicant/Owner: <u>Minnesota Municipal Power Agency</u>	County: <u>Rice</u>
Investigator: <u>ER Slattery</u>	State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>D-4</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Salix exigua</u>	<u>90±</u>	<u>T</u>	<u>OBL</u>	9. <u>Viburnum lentago</u>	<u><5</u>	<u>S</u>	<u>FAC+</u>
2. <u>Populus deltoids</u>	<u><5</u>	<u>T</u>	<u>FAC+</u>	10. _____			
3. <u>Vitis riparia</u>	<u><5</u>	<u>WW</u>	<u>FACW-</u>	11. _____			
4. <u>Urtica dioica</u>	<u><5</u>	<u>H</u>	<u>FAC+</u>	12. _____			
5. <u>Sambucus Canadensis</u>	<u><5</u>	<u>S</u>	<u>FACW-</u>	13. _____			
6. <u>Parthenocissus vitacea</u>	<u><5</u>	<u>H</u>	<u>FAC-</u>	14. _____			
7. <u>Rhamnus catharica</u>	<u><5</u>	<u>S</u>	<u>FACU*</u>	15. _____			
8. <u>Fraxinum pennsylvanica</u>	<u><5</u>	<u>T</u>	<u>FACW</u>	16. _____			
Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-).							
Remarks: * "Wetland Plants and Plant Communities of Minnesota & Wisconsin"; Egger, S.D. & Reed, D.M. 1997 lists Rhamnus cathartica as FAC-.							

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches ⁽¹⁾ <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: Area where sandbar willow (<i>Salix exigua</i>) occurs is slightly lower than adjoining field and other areas of bank allowing water to collect here more than elsewhere along bank.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> (1) No <input type="checkbox"/> (1) >/ 20"
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-8		10YR3/1			Silty clay
8"+		10YR3/1			Clay silt
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks: Soil is heavy and contains more moisture than at Data Point D-3.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type:				
• Cowardin:	PEMCd			
• USFWS Circular 39:	Type 3			
Remarks: This wetland part of the drainageway system.				

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/13/02, 9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>E-1</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Phalaris arundinacea	95+	H	FACW+	9.			
2. Vitis riparia	<5	WV	FACW-	10.			
3. Acer negundo	<5	T	FACW-	11.			
4. Scirpus fluviatilis	<5	H	OBL	12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input checked="" type="checkbox"/> Oxidized Root Channels in Upper 12 inches ⁽¹⁾ <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: ⁽¹⁾ Below 20".	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-20		10YR2/1			Moist silty clay
20+		10YR5/1	7.5 YR 4/6		Silty clay
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type:				
• Cowardin:	PEMAd			
• USFWS Circular 39:	Type 1			
Remarks: The depression can be considered a farmed wetland.				

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/13/02, 9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>E-2</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Cirsium arvense</u>	<u>5</u>	<u>H</u>		9. _____			
2. <u>Urtica dioica</u>	<u>5</u>	<u>H</u>		10. _____			
3. <u>Rose multiflora</u>	<u><5</u>	<u>S</u>	<u>FACU</u>	11. _____			
4. <u>Phalaris arundinacea</u>	<u>25</u>	<u>H</u>	<u>FACW+</u>	12. _____			
5. <u>Vitis riparia</u>	<u><5</u>	<u>WV</u>	<u>FACW-</u>	13. _____			
6. <u>Solidago gigantean</u>	<u>10</u>	<u>H</u>	<u>FACW</u>	14. _____			
7. _____				15. _____			
8. _____				16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: Data point located on higher ground than drainageway and Data Point No. E-2 and soil is much drier.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-16		10YR2/1			Clay silt
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type:				
<ul style="list-style-type: none"> • Cowardin: _____ • USFWS Circular 39: _____ 				
Remarks:				

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/16/02, 9/23602</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>F-1</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Corn (stunted)	5	H	---	9.			
2. Xanthium strumarium	25	H	FAC	10.			
3. Pigweed (Amaranthus sp.)	60	H	---	11.			
4.				12.			
5. Salix exigua*		T	OBL	13.			
6. Scirpus fluviatilis*		H	OBL	14.			
7. Polygonum amphibium*		H	OBL	15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: *These species are located in the center of the drainageway away from Data Point No. F-1.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks:	

SOILS

Map Unit Name (Series and Phase):		Cordova clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-20		10YR2/1			Silty clay
20+		10YR4/1			Silty clay trace sand
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type:				
• Cowardin:	PEMAd			
• USFWS Circular 39:	Type 1			
Remarks:				

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/13/02, 9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>F-2</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Corn	100	H	Upland?	9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Data point is in healthy stand of corn which transitions quickly to hydrophytic species towards the lower ground.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: No hydrology indicators present.	

SOILS

Map Unit Name (Series and Phase):		Hayden loam (Map Series 114)		Drainage Class:	Well drained
Taxonomy (Subgroup):		Typic hapludalfs		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-22		10YR2/1			Silty clay trace sand
22+		10YR4/1			Silty clay trace sand
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Type:					
<ul style="list-style-type: none"> • Cowardin: _____ • USFWS Circular 39: _____ 					
Remarks:					

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/13/02, 9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>F-3</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Corn (slightly stunted)	75	H	---	9.			
2. Xanthium strumarium	25	H	FAC	10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: Data point is located on slightly higher ground than drainageway.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-19		10YR2/1			Silty clay
18-20+		10YR6/2			Silty sand
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present? *	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Type:					
<ul style="list-style-type: none"> • Cowardin: _____ • USFWS Circular 39: _____ 					
Remarks: *Corn.					

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>9/13/02, 9/26/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>F-4</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Xanthium strumarium</u>	<u>50</u>	<u>H</u>	<u>FAC</u>	9. _____			
2. <u>Scirpus fluviatilis</u>	<u><5</u>	<u>H</u>	<u>OBL</u>	10. _____			
3. <u>Ambrosia artemisiifolia</u>	<u>20</u>	<u>H</u>		11. _____			
4. <u>Ambrosia trifida</u>	<u><5</u>	<u>H</u>	<u>FAC+</u>	12. _____			
5. <u>Populics deltoids</u>	<u>5</u>	<u>H</u>	<u>FAC+</u>	13. _____			
6. <u>Corn (stunted)</u>	<u><5</u>	<u>H</u>	<u>---</u>	14. _____			
7. _____				15. _____			
8. _____				16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input checked="" type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: _____	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-9		10YR2/1			Silty clay
9-10		10YR4/1			Sandy silty clay
10-18+		10YR6/2			Silty sand
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type:				
• Cowardin:	PEMAd			
• USFWS Circular 39:	Type 1			
Remarks:				

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: _____

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. _____				9. _____			
2. _____				10. _____			
3. _____				11. _____			
4. _____				12. _____			
5. _____				13. _____			
6. _____				14. _____			
7. _____				15. _____			
8. _____				16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: _____

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: _____	

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>A-1</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Pigweed (Amaranthus sp.)		H	---	9.			
2. Xanthium strumarium		H	FAC	10.			
3. Unknown grass		H	---	11.			
4. Phalaris arundinacea		H	FACW+	12.			
5. Polygonum amphibium		H	OBL	13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Depression was planted with corn but no corn present. Corn present around perimeter of depression on south, east and north. Stunted weeds and unknown immature grass are present in depression. A ring of cocklebur (Xanthium strumarium) approximately 10 feet wide is present inside corn with some scattered pigweed (Amaranthus sp.) and smartweed (Polygonum amphibium) present. Depression extends across I-35 fence line. Vegetation in fence line dominated by Reed canary grass (Phalaris arundinacea).

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input checked="" type="checkbox"/> Other (Explain in Remarks)
Remarks: Stunted plant growth in depression and no corn present. Landowner did not indicate the presence of field tile.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-18		10YR2/1			Loam
18-33		10YR2/1			Loam trace sand
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input checked="" type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type:				
• Cowardin:	PEMA			
• USFWS Circular 39:	Type 1			
Remarks: The depression can be considered a farmed wetland.				

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>A-2</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Corn (Zea mays)	100	H	Upland?	9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Corn shows no sign of stress.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: Very dry soil on slightly higher ground than Data Point A-1. No hydrology indicators present.	

SOILS

Map Unit Name (Series and Phase):		LeSueur loam (Map Series 1361)		Drainage Class:	Moderately well drained
Taxonomy (Subgroup):		Aquic Arquidolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-4		10YR3/2			Sandy silt w/cobbles
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks: Soil is very dry. Could not penetrate probe any deeper.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Hydric Soils Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Type:					
<ul style="list-style-type: none"> • Cowardin: _____ • USFWS Circular 39: _____ 					
Remarks:					

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>B-1</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Carex molesta</u>	<u><5</u>	<u>H</u>	<u>NL ⁽¹⁾</u>	9. _____			
2. <u>Phalaris arundinacea</u>	<u>10</u>	<u>H</u>	<u>FACW+</u>	10. _____			
3. <u>Agrostis gigantea</u>	<u>5</u>	<u>H</u>	<u>FACW</u>	11. _____			
4. <u>Juncus tenuis</u>	<u>40</u>	<u>H</u>	<u>FAC</u>	12. _____			
5. <u>Panicum dichotomiflorum</u>	<u>10</u>	<u>H</u>	<u>FACW-</u>	13. _____			
6. _____				14. _____			
7. _____				15. _____			
8. _____				16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: (1) Not Listed in National List of Plant Species That Occur in Wetlands; North Central (Region 3) U.S. Department of the Interior Biological Report 88(26.3) May 1988.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input checked="" type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: Area located at bottom of two rises – one to north and one to south. Runoff from these two hills tends to collect in area.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-18		10YR2/1			Loam w/organic
18-33		10YR2/1			Loam
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input checked="" type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Type:					
• Cowardin:	PEMA				
• USFWS Circular 39:	Type 1				
Remarks:					

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>B-2</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Corn (Zea mays)	100	H	Upland?	9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Tall corn showing no signs of stress.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: No wetland hydrology indicators.	

SOILS

Map Unit Name (Series and Phase):		LeSueur loam (Map Series 1361)		Drainage Class:	Moderately well drained
Taxonomy (Subgroup):		Aquic Argiudolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-18		10YR3/2			Sandy silt w/cobbles
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Hydric Soils Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type:				
<ul style="list-style-type: none"> • Cowardin: _____ • USFWS Circular 39: _____ 				
Remarks:				

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>C-1</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Pigweed (Amaranthus sp.)	100	H		9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Field planted in corn but plants stunted and missing in depression area. Instead, the depression is 100% vegetated in short weedy vegetation (pigweed). The species of pigweed could not be identified since it was just beginning to come into flower.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input checked="" type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: The soil surface was dry but evidence of earlier inundation includes deeply cracked, crusty caked surface.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-27		10YR2/1			Loam
27-33+		10YR6/1			Clay silt
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input checked="" type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type:				
• Cowardin:	PEMA			
• USFWS Circular 39:	Type 1			
Remarks: The depression can be considered a farmed wetland.				

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

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Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>C-2</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. Corn (Zea mays)	100	H		9.			
2.				10.			
3.				11.			
4.				12.			
5.				13.			
6.				14.			
7.				15.			
8.				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Cultivated field planted in corn. Data point in transition area from stunted and missing corn in depression to healthy, non-stressed corn.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: The soil surface was dry. Data point is outside of area of depression where evidence of inundation is present.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-26		10YR2/1			Loam
26-33		10YR6/1			Clay silt
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input checked="" type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks:					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>			
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Type:					
<ul style="list-style-type: none"> • Cowardin: _____ • USFWS Circular 39: _____ 					
Remarks:					

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u>	Date: <u>7/16/02, 7/23/02</u>
Applicant/Owner: <u>Minnesota Municipal Power Agency</u>	County: <u>Rice</u>
Investigator: <u>ER Slattery</u>	State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>D-1</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Phalaris arundinacea (1)</u>	<u>95</u>	<u>H</u>	<u>FACW+</u>	9.			
2. <u>Salix exigua (1)</u>	<u><5</u>	<u>S</u>	<u>OBL</u>	10.			
3. <u>Ulmus americana (2)</u>	<u><5</u>	<u>T</u>	<u>FACW-</u>	11.			
4. <u>Hypericum pyramidatum (2)</u>	<u><5</u>	<u>H</u>	<u>FAC+</u>	12.			
5. _____				13.			
6. _____				14.			
7. _____				15.			
8. _____				16.			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks:
 (1) Species found in bottom of drainageway or in lower portion of sideslopes.
 (2) Species found in upper portion of sideslopes.

HYDROLOGY

<input checked="" type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input checked="" type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: <u>0</u> (in.)	Wetland Hydrology Indicators: Primary Indicators <input checked="" type="checkbox"/> Inundated <input checked="" type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input checked="" type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: Data point taken in bottom of drainageway near toe of slope. Review of historical aerial photography and presence of 60" +/- culvert indicate that drainageway was previously excavated. No date of excavation has been determined. North end of culvert is located at north property line and extends south 20'.	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-12		10YR4/2			Clay silt
12+		10YR5/2			Silty sand
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input checked="" type="checkbox"/>	Aquic Moisture Regime	<input type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks: Soils appear to be depositional and fully saturated to surface. Saturated condition appears to be permanent.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>			
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Type:					
• Cowardin:	PEMCD				
• USFWS Circular 39:	Type 3				
Remarks: Water in drainageway appears to be permanent since a minnow population water observed along with a frog.					

DATA FORM
 ROUTINE WETLAND DETERMINATION
 (1987 COE Wetlands Delineation Manual)

Project/Site: <u>MMPA Power Generation Project – Faribault, MN</u> Applicant/Owner: <u>Minnesota Municipal Power Agency</u> Investigator: <u>ER Slattery</u>	Date: <u>7/16/02, 7/23/02</u> County: <u>Rice</u> State: <u>Minnesota</u>
Do Normal Circumstances exist on the site? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Is the site significantly disturbed (Atypical Situation)? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the area a potential Problem Area? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If needed, explain on reverse.)	Community ID: _____ Transect ID: _____ Plot ID: <u>D-2</u>

VEGETATION

Dominant Plant Species	% Cover	Stratum	Indicator	Dominant Plant Species	% Cover	Stratum	Indicator
1. <u>Ambrosia trifida</u>	<u>75</u>	<u>H</u>	<u>FAC+</u>	9. _____			
2. <u>Cirsium aruense</u>	<u>10</u>	<u>H</u>	<u>FACU</u>	10. _____			
3. <u>Urtica dioica</u>	<u>5</u>	<u>H</u>	<u>FAC+</u>	11. _____			
4. <u>Lactuca scariola</u>	<u><5</u>	<u>H</u>	<u>FAC</u>	12. _____			
5. _____				13. _____			
6. _____				14. _____			
7. _____				15. _____			
8. _____				16. _____			

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-): _____

Remarks: Data point taken on top of bank.

HYDROLOGY

<input type="checkbox"/> Recorded Data (Describe in Remarks): <input type="checkbox"/> Stream, Lake, or Tide Gauge <input type="checkbox"/> Aerial Photographs <input type="checkbox"/> Other <input type="checkbox"/> No Recorded Data Available Field Observations: Depth of Surface Water: _____ (in.) Depth to Free Water in Pit: _____ (in.) Depth to Saturated Soil: _____ (in.)	Wetland Hydrology Indicators: Primary Indicators <input type="checkbox"/> Inundated <input type="checkbox"/> Saturated in Upper 12 inches <input type="checkbox"/> Water Marks <input type="checkbox"/> Drift Lines <input type="checkbox"/> Sediment Deposits <input type="checkbox"/> Drainage Patterns in Wetlands Secondary Indicators (2 or more required): <input type="checkbox"/> Oxidized Root Channels in Upper 12 inches <input type="checkbox"/> Water-Stained Leaves <input type="checkbox"/> Local Soil Survey Data <input checked="" type="checkbox"/> FAC-Neutral Test <input type="checkbox"/> Other (Explain in Remarks)
Remarks: <u>Sufficient hydrology indicators are not present.</u>	

SOILS

Map Unit Name (Series and Phase):		Glencoe clay loam (Map Series 114)		Drainage Class:	Very poorly drained
Taxonomy (Subgroup):		Cumulic Endoaquolls		Field Observations Confirm Mapped Type?	Yes <input checked="" type="checkbox"/> (1) No <input type="checkbox"/> (1) >/ 20"
Profile Description:					
Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contract	Texture, Concretions, Structure, etc.
0-20		10YR3/1			Dry sandy silt
20+		10YR2/1			Loam
Hydric Soil Indicators:					
<input type="checkbox"/>	Histosol	<input type="checkbox"/>	Concretions		
<input type="checkbox"/>	Histic Epipedon	<input type="checkbox"/>	High Organic content in Surface Layer in Sandy Soils		
<input type="checkbox"/>	Sulfidic Odor	<input type="checkbox"/>	Organic Streaking in Sandy Soils		
<input type="checkbox"/>	Aquic Moisture Regime	<input type="checkbox"/>	Listed on Local Hydric Soils List		
<input type="checkbox"/>	Reducing Conditions	<input type="checkbox"/>	Listed on National Hydric Soils List		
<input checked="" type="checkbox"/>	Gleyed or Low-Chroma Colors	<input type="checkbox"/>	Other (Explain in Remarks)		
Remarks: It is likely that the soil, especially the top 20", is overburden from excavation of the drainageway.					

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>		
Hydric Soils Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Is this Sampling Point Within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Type:				
<ul style="list-style-type: none"> • Cowardin: _____ • USFWS Circular 39: _____ 				
Remarks:				

Appendix B

Photographs



Photo 1: Looking north at Wetland A. I-35 right-of-way to left.



Photo 2: Looking east at Wetland A and location of Data Point Nos. A-1 and A-2.



Photo 3: Looking southwest at Wetland A.



Photo 4: Looking northeast at Wetland B. Sign marks Enron gas pipeline crossing.



Photo 5: Looking south at Wetland B and at location of Data Point Nos. B-1 and B-2.



Photo 6: Looking east at Wetland C.



Photo 7: Looking west at Wetland C and at location of Data Point Nos. C-1 and C-2.



Photo 8: Looking north at culvert located on north end of Wetland D. Data Point No. D-1 taken at bottom of drainageway in foreground.



Photo 9: Looking south at Wetland D. Photo taken from south end of culvert. Note – soybean field to east and cornfield to west. Data Point No. D-2 taken at top of bank to west.



Photo 10: Looking west near north property line. Drainageway (Wetland D); Wetland C and I-35 in background.



Photo 11: General site photo looking south along east side of site.



Photo 12: Looking northeast at Wetland D taken from a point southwest of the tree line near the midpoint of the drainageway.



Photo 13: Looking northwest at Wetland A taken from pipeline crossing at west property line. Note I-35 to the left.



Photo 14: Looking southeast along drainageway as it leaves Wetland A.



Photo 15: Looking west along drainageway downstream of Wetland A. Note I-35 in background.



Photo 16: Looking east at Wetland E and the drainage ditch (Wetland D) in the background.



Photo 17: Looking northeast at Wetland D. Photo taken from the southwest quadrant of the subject property. Note the soybean field up to the edge of the drainageway.



Photo 18: Looking northwest at Wetland D. Photo taken near west property line. Note soybean field up to edge of sandbar willow.



Photo 19: Looking west (upstream) at main drainageway near west property line.



Photo 20: Looking southwest at drainageway along west property line. Photo taken near the confluence with main drainageway.



Photo 21: Looking west with drainageway along the southern property line to the right. Photo taken from adjoining soybean field to the south of the south property line.

Appendix C

Phase I Historical Review (IMA Consulting Report)



File Copy

August 7, 2002

Michael Donnelly
Project Manager
Stanley Consultants, Inc.
Oakdale Research Park
2658 Crosspark Road, Suite 100
Coralville, IA 52241-3212

RE: Phase I Cultural Resource Survey for the MMPA Project Permitting

Dear Mr. Donnelly,

I am pleased to submit the draft letter report for the above-mentioned project. The enclosed report documents the survey and provides a summary of results and recommendations. Please let me know if you have any comments or questions.

Thank you for the opportunity to work on the MMPA Project Permitting. We hope that you will consider IMA Consulting for future cultural resource projects. Feel free to call with any questions or for further information. I can be reached at (651) 848-0043 or by email at gabe@innarch.com.

Sincerely,
IMA Consulting, Inc.

Gabrielle Bourgerie
Operations Manager

Enclosures: Letter Report
Invoice

Project Description

Stanley Consultants, Inc. of Iowa contracted with IMA Consulting to conduct a Phase I cultural resource inventory of the MMPA project area. Phase I inventory included a pedestrian survey of the entire project area and limited subsurface testing designed to examine the geomorphological potential for intact subsurface archaeological deposits, as well as an architectural history survey of adjacent properties.

The MMPA project survey area comprises approximately 33 acres of cropland in the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 13, T110N, R21W in Rice County, Minnesota (Figure 1). A residential property comprising a farmhouse, barn, and outbuildings occupy approximately 2.3 acres in the northeast corner of the survey area (Figure 1). The residential area was excluded from the archaeological survey, but was included in the architectural history survey.

The gently rolling landscape of the survey area rises onto a knoll along the western edge of the survey area. The Cannon River is approximately 2,100 meters southeast of the survey area. The soils, which formed in friable glacial till on uplands, belong to the Lester and Hayden Series of loams and the Webster Series of clay loams (Carlson et al 1975). The Lester and Hayden Series supported a pre-settlement biome of deciduous forest while the Webster Series supported water-tolerant prairie grasses.

The survey area was planted in soybeans and corn at the time of the survey. Surface visibility ranged from 20 to 30 percent across the survey area, with the ground surface in the soybean fields visible between rows and within the rows as the crew moved plants aside. The surface visibility in the corn was uniform.

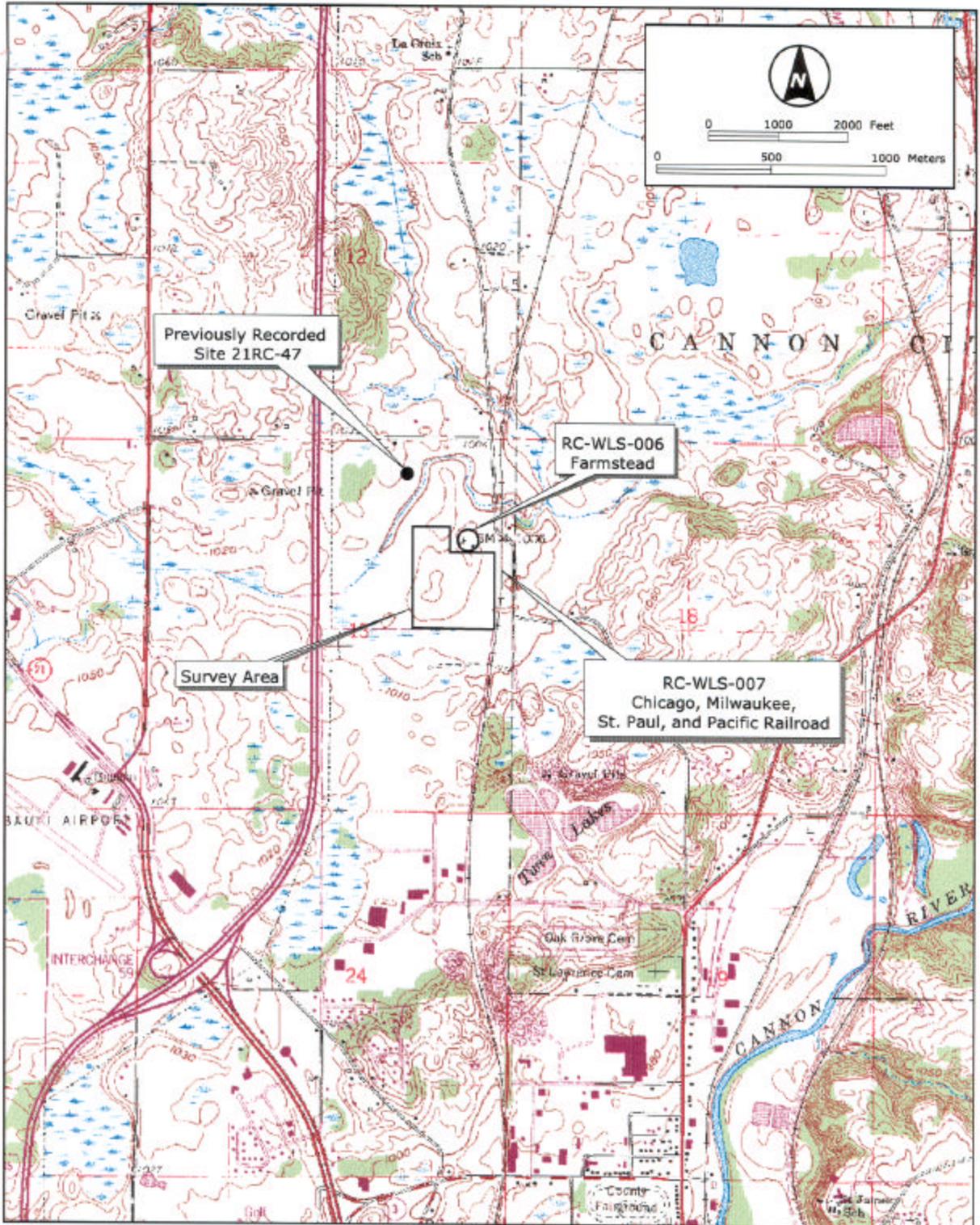
Previously Recorded Archaeological Sites

A review of site files and maps at the Minnesota State Historic Preservation Office (SHPO) verified that one archaeological site (21CR47) has been recorded within one mile of the MMPA project area. The site was identified during a 1996 pipeline survey that traversed the NW $\frac{1}{4}$ and NE $\frac{1}{4}$ of Section 13, adjacent to the survey area (Winham et al 1996). The 1996 pipeline survey encompassed a total of 177.36 acres near the MMPA project area and two sites were recorded, for a density of .01 site per acre. The 1996 survey is the only documented archaeological survey conducted in or near the project area.

Site 21CR47 comprises two flakes of "cream/gray banded chert" found on the surface in the NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 13, approximately 230 meters northwest of the MMPA project area (Figure 1). The 21CR47 site area had been plowed into the subsoil and the site was recommended not eligible for listing on the National Register of Historic Places.

Previously Recorded Architectural Properties

No architectural resources have been recorded within one mile of the MMPA project area. Five reports on the architectural history of Faribault are on file at the SHPO (Downtown Association 1988; Granger and Kelley 1987; Hoisington 1994a, 1994b; Zahn 1988). None of the reports contains specific information on resources within a mile of the project area.



Source: 7.5 Minute U.S.G.S. Quadrangle: Faribault, 1991

**Phase I Cultural Resource Survey
MMPA Project Permitting
Rice County, Minnesota**

Project Location

Figure 1

Archaeological Survey Summary

Field personnel from IMA Consulting met Mr. Edwin Slattery of Stanley Consultants at the MMPA project area on July 23, 2002. The IMA Consulting crew included James Lindbeck (senior archaeological technician), and Thomas Madigan (geoarchaeologist). Gabrielle Bourgerie served as principal investigator and project manager. Mr. Slattery reviewed maps of the project area and showed the IMA Consulting crew the boundaries of the survey area. The area was approximately 70 percent soybean crop between one and two feet tall. Approximately 30 percent of the project area was in eight-foot tall corn. Soils in the eastern half of the area (soybean field) are the Webster Series of clay loam. This area has a very low archaeological potential because it is low and wet, and was drained for cultivation.

The corn crop occupied the highest terrain of the survey area and was the only portion that retained any pre-settlement topsoil. West of the corn crop, again in soybeans, the topsoil is eroded and the B-horizon (subsoil) is exposed on the surface. There is no potential for subsurface archaeological resources in this area.

The crew conducted a pedestrian survey of the project area at 10-meter intervals to assess conditions and identify cultural materials visible on the ground surface. Within the portion of the survey area planted in soybeans, the crew focused especially on areas where there were gaps in the crop cover. The survey technique in the soybean field also involved moving the plants to the side while walking to observe the surface. Survey transects were narrowed to 5-meter intervals in the cornrows because this area has the greatest archaeological potential and peripheral visibility was restricted. No cultural materials were identified during pedestrian survey.

After pedestrian survey, two shovel tests were excavated to examine the stratigraphy of the two landforms within the project area that were not wetland prior to cultivation. Shovel test one was excavated in soybeans near the eastern edge of the survey area. Shovel test two was excavated in corn on the high point of the survey area in corn. All excavated soils were screened through 1/4-inch mesh. Shovel test one revealed a complete absence of topsoil. The topsoil in shovel test two was still in place, although plowed into the subsoil. Shovel test profiles are provided below:

Shovel Test One Soil Profile

Depth (cm below surface)	Soil Description
0-15 Ap (plow zone)	Brown (10YR 4/3) loam
15-30 Bt	Dark yellowish brown (10YR 4/4) heavy loam

Shovel Test Two Soil Profile

Depth (cm below surface)	Soil Description
0-23 Ap (plow zone)	Very dark grayish brown (10YR 3/2) loam
23-30 Bt	Dark yellowish brown (10YR 4/4) heavy loam

No cultural materials were recovered during shovel testing.

Architectural History Survey Summary

The Phase I architectural history survey included the project area and all properties that front the project area, including the property within the "Exclusion Area." Two properties were

identified as part of the architectural history survey: a farmstead (Site RC-WLS-006) and a railroad (Site RC-WLS-007). The survey was conducted simultaneously with the archaeological survey. Barbara Mitchell served as architectural historian.

Site RC-WLS-006

Site RC-WLS-006 is a farmstead that is located in the N ½ of the SE ¼ of the NE ¼ of Section 13, Township 110N, Range 21W. The site consists of five buildings: a single-family dwelling, barn, pump house, and two sheds of undetermined use. Based on the building style and a review of historic plat maps, the house and barn may have been built as early as the 1890s (see site form, attached).

Plat maps present some confusion as to who might have owned the property historically. On the 1900, 1915, and 1916 plat maps, the residence is depicted in the NE ¼ of the NE ¼ of Section 13, rather than in the SE ¼ of the NE ¼ (North West Publishing Company 1900; W. W. Hixson and Company 1916; Webb Publishing Company 1915). Based on the relationship between the residence and the bend in Acorn Trail on the plat maps, we can assume that the residence depicted on the historic maps is the same one associated with RC-WLS-006, even though it is depicted further north than it should be. The plat maps indicate that the residence (along with the rest of the NE ¼ of the NE ¼) was owned by S. G. Benedict in 1900 and 1916, and Jacob J. Friesen in 1915. The plats also indicate that the property in the SE ¼ of the NE ¼ of Section 13 was owned by William Friesen from 1900 through at least 1916. Local histories do not include information on either S. G. Benedict or Jacob J. Friesen. William Friesen had lived in Rice County for about 20 years when the 1915 plat map was published and Jacob Friesen for about 12 years (Webb Publishing Company 1916). No significant historical associations were found for any of the landowners.

Although the farmstead appears to date to the 1890s, most of the buildings have been altered and the farmstead as a whole is no longer intact. None of the individual buildings is a significant example of its property type and none is likely to be found eligible for individual listing on the National Register of Historic Places. The two primary buildings, the house and barn, no longer retain integrity of design, material, or workmanship. One of the sheds is altered significantly and the other appears to be barely 50 years old. Based on a comparison with a 1991 aerial photograph, the farmstead has lost at least one primary structure. The farmstead is no longer associated with the surrounding cropland, which is under separate ownership. Based on these considerations, the farmstead does not appear to retain sufficient integrity of design, setting, feeling, or association for listing on the National Register of Historic Places. No further work is recommended for Site RC-WLS-006.

Site RC-WLS-007

Site RC-WLS-007 is a one-mile segment of the Chicago, Milwaukee, St. Paul and Pacific Railroad. The segment passes north-to-south through the eastern quarter of Section 13, Township 110N, Range 21W. The edge of the railroad right-of-way borders the eastern edge of the project area. Few railroads in Minnesota have been evaluated for listing on the National Register of Historic Places and none have been recorded in Rice County. However, the SHPO generally considers the railroads that appear on the 1886 Railroad Map as being historically significant. The Chicago, Milwaukee, St. Paul and Pacific Railroad is depicted on the map, running from Minneapolis, through Faribault, and south of Austin into Iowa.

In Minnesota, the company that eventually became the Chicago, Milwaukee, St. Paul and Pacific Railroad was incorporated as the Minneapolis and Cedar Valley Railroad on March 1, 1856 (Luecke 1988). The purpose of the railroad was to connect Minneapolis/St. Paul with Milwaukee and Chicago via Prairie du Chien, Wisconsin. Construction began in 1858 in Minneapolis, and although construction was interrupted several times, the first passenger train ran between the Twin Cities and Faribault on December 23, 1865. By that time, the railroad was known as the Minnesota Central Railway (Luecke 1988:1-6). In 1868, the line was completed between Minneapolis and Chicago and was known as the Milwaukee and St. Paul Railway Company, or the "St. Paul" (Prosser 1966). The railroad may be significant as one of the first railroads to be built between Faribault and the Twin Cities.

Integrity considerations for railroad corridors are still being developed in Minnesota. However, the integrity considerations for other linear features, such as military roads and trails, can be applied to railroad segments in lieu of formalized criteria. For roads and trails, there are five integrity considerations:

- 1) route,
- 2) physical appearance,
- 3) sense of function or destination,
- 4) setting, and
- 5) other associational qualities, such as name or historical associations.

The railroad segment passing through Section 13 is probably part of the Minnesota Central Railway line that opened in December 1865. On all available historic county plat maps, the railroad is depicted on approximately the same alignment as it is now (Northwest Publishing Company 1900; W. W. Hixson and Company 1916; Webb Publishing Company 1915). The physical appearance of the segment most likely has not changed. There is still a noticeable railroad grade, and the rails and wooden ties are still intact. Because the line is still in use, there is a definite sense of function and destination. The setting is much as it might have been over a hundred years ago, with shrubs and trees separating farmland from the railroad right-of-way. Other historical associations have not been explored as part of this project. However, other properties associated with the Chicago, Milwaukee, St. Paul and Pacific railroad have been recorded in Minnesota, including the passenger depot in Northfield (RC-NFC-244).

Summary and Recommendations

No archaeological resources were identified within the MMPA project area, and there is little or no potential for intact archaeological remains because of plowing, erosion, and landscape setting.

The farmstead, Site RC-WLS-006, does not appear to retain sufficient integrity of design, setting, feeling, or association for listing on the National Register of Historic Places. No further work is recommended for this site.

Based on the information collected during this survey, we can reasonably assume that Site RC-WLS-007 is eligible for listing on the National Register of Historic Places. However, the MMPA project is not expected to have an adverse effect on the National Register-eligibility of the site. The 250-megawatt combined-cycle, gas-fired power plant will only occupy 20 acres of the 33-acre project area. Although the final design for the proposed plant has not been determined, the building will have a modern commercial or industrial appearance, possibly

with natural lines and colors. The final design could be altered by a number of details, including bush and tree plantings, fences, paint colors, and lighting. The Federal Aviation Administration may also require a light or lights on the plant stack. However, lighting the stack would not create a new effect in the surrounding area, because the light will blend with the lights of an existing power plant to the east and an industrial/commercial area to the south. There will be no direct impacts to the railroad grade or the bordering vegetation. Indirect impacts include possible visual and audible impacts that are not expected to have adverse effect on the National Register-eligibility of the railroad segment. No further work is recommended for Site RC-WLS-007 unless the project is changed.

No additional cultural resources work is recommended for the MMPA Project area, provided the planned impacts to the site do not change.

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Architectural History Inventory

Long Form
Page 1

RC-WLS-006

Farmstead

17250 Acorn Trail, Wells Twp, Rice County, Minnesota

(Long forms are used for properties that meet minimum age and integrity considerations for full recordation)

GENERAL INFORMATION

Survey

Field I.D. S1
Inventory Level Phase I Inventory
Survey Date July 23, 2002
Surveyor(s) B. Mitchell

Survey Notes

Surveyor did not have permission to access the property. Inventory was conducted from public right-of-way and from the cropland that surrounds the farmyard.

Site Information

Buildings House, barn, pump house, two sheds
Vegetation Deciduous and coniferous trees
Land use Property is a single-family residence. Resident does not own surrounding cropland.
Original Site? Yes

Site Notes

The farmyard is approximately 1/8 mile off the road, and is bordered on the E and S by soybean crops and on the N and W by cornrows. The landscape rises gently toward the center and is dotted with deciduous trees.

LOCATION

Quad Paribault
T 110N R 21W Sec. 13
N 1/2 SE 1/4 NE 1/4
UTM Z 15 E 477319 N 4909173



PHOTOGRAPH: Overall Site, from Acorn Trail

Roll 1 Frame 5 Date 07.23.02 Facing SW



Architectural History Inventory

Long Form
Page 2

RC-WLS-006

Farmstead

17250 Acorn Trail, Wells Twp, Rice County, Minnesota

(Long forms are used for properties that meet minimum age and integrity considerations for full recordation)

DESCRIPTION OF PRIMARY BUILDING

Function

Original Function	Single-family residence
Current Function	Single-family residence

Form/Design

Style	Faint remnants of Queen Anne
Commercial Style	n/a
Plan Shape	Rectangle (originally "T")
# of Stories	1 1/2
Structure	Wood Frame
Roof Shape	Cross-gable
Roof Details	Simple bargeboard in gable ends
Window Type(s)	Old and new: fixed, casement, 1-over-1 and 2-over-1 double-hung
Signage	n/a

Materials

Foundation	Concrete Block
Wall (primary)	Modern wood and composition board siding
Wall (secondary)	Horizontal wood siding (narrow exposure)
Roofing	Composition asphalt shingles

Note on Interior (if applicable)

Not accessible

Note on Architecture

HISTORY

Construction

Date	1890-1900
Owner	S.G. Benedict (1900)
Architect	Unknown

Alterations

Date	unknown
Owner	unknown

Note on Alterations

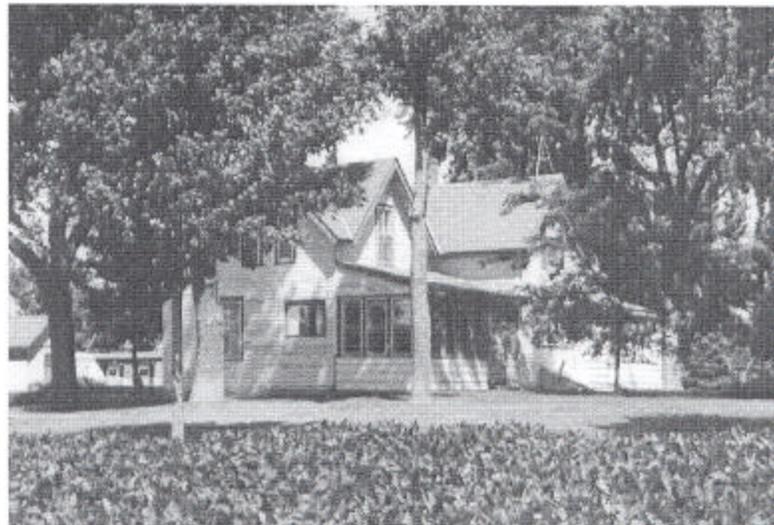
House is severely altered, including additions, in-fill of porches, and replacement of much of the original wall cladding, roofing materials, and windows.

Note on History

On the 1900, 1915, and 1916 plat maps, the residence is depicted in the NE 1/4 of the NE 1/4 of Section 13, rather than in the SE 1/4 of the NE 1/4. However, based on the relationship between the residence and the bend in Acorn Trail on the plat maps, we can assume that this is the same property. The plat maps indicate that the residence (along with the rest of the NE 1/4 of the NE 1/4) was owned by S. G. Benedict in 1900 and 1916, and Jacob J. Friesen in 1915. The plats also indicate that the property in the SE 1/4 of the NE 1/4 of Section 13 was owned by William Friesen in 1900, 1915, and 1916. William Friesen had lived in Rice County for about 20 years when the 1915 plat map was published and Jacob Friesen for about 12 years (Webb Publishing Company 1916). No significant historical associations were found for any of the men.

PHOTOGRAPH: House, from soybean field south of farmyard

Roll 1 Frame 15 Date 07.23.02 Facing NW



Architectural History Inventory

Long Form
Page 3

RC-WLS-006

Farmstead

17250 Acorn Trail, Wells Twp, Rice County, Minnesota

(Long forms are used for properties that meet minimum age and integrity considerations for full recordation)

CONDITION/INTEGRITY

Design Integrity	Poor to fair
Material Integrity	Poor
Site Integrity	Poor to fair
Window Integrity	Most original windows replaced/ openings intact

Note on Integrity

The two primary buildings, the house and barn, no longer retain integrity of design, material, or workmanship. One of the sheds has significant alterations and the other appears to be barely 50 years old. Based on a comparison with a 1991 aerial photograph, the farmstead has lost at least one primary structure. The farmstead is no longer associated with the surrounding cropland, which is under separate ownership. Neither the individual buildings nor the farmstead as a whole retain sufficient integrity of design, setting, materials, workmanship, feeling, or association for listing on the National Register of Historic Places.

REFERENCES

North West Publishing Company

1900 *Plat Book of Rice County, Minnesota: Compiled from County Records and Actual Surveys*. Northwest Publishing Company, Philadelphia.

W. W. Hixson and Company

1916 *Plat Book of Minnesota*. W. W. Hixson, Rockford, Illinois.

Webb Publishing Company

1915 *Atlas and farm directory with complete survey in township plats, Rice County, Minnesota*. Webb Publishing Company, St. Paul.

SIGNIFICANCE

Level of Significance	Local
State Context	Railroads and Agricultural Settlement, 1870-1940
NR Eligibility	Not Eligible
NR Criteria	n/a

Note on Significance

Although the farmstead appears to date to the 1890s, most of the buildings have been altered and the farmstead as a whole is no longer intact. None of the individual buildings is a significant example of its property type and none is likely to be found eligible for individual listing on the National Register of Historic Places. No significant historical associations were found.

(Long forms are used for properties that meet minimum age and integrity considerations for full recordation)

PHOTOGRAPH: Barn and outbuildings, from southwest corner of property

Roll 1 Frame 11 Date 07.23.02 Facing NE



PHOTOGRAPH: Outbuildings, from northwest corner of property

Roll 1 Frame 7 Date 07.23.02 Facing SE



(Long forms are used for properties that meet minimum age and integrity considerations for full recordation)

GENERAL INFORMATION

Survey

Field I.D. S2
 Inventory Level Phase I
 Survey Date 07/23/2002
 Surveyor(s) B. Mitchell

LOCATION

Quad	Faribault (1960)			
T	110N	R	21W	Sec. 13
	E 1/4		E 1/4	
(N) UTM Z	15	E	477464	N 4909626
(S) UTM Z	15	E	477337	N 4907987

Survey Notes

Only the portion of the railroad segment that is located in the SE 1/4 of the NE 1/4 of Section 13 was investigated as part of this project.

Site Notes

The railroad is actively being used. Acorn Trail is a north-south road that parallels the railroad to the east in the SE 1/4 of the NE 1/4 of Section 13, crosses the tracks at approximately the quarter-section line, and then parallels the railroad to the west in the NE 1/4 of the NE 1/4 of Section 13. The railroad is bordered on either side by shrubs, trees, and tall grasses.



PHOTOGRAPH: Chicago, Milwaukee, St. Paul and Pacific Railroad, from Acorn Trail.

Roll 1 Frame 1 Date 07.23.02 Facing South



(Long forms are used for properties that meet minimum age and integrity considerations for full recordation)

HISTORY

In Minnesota, the company that eventually became the Chicago, Milwaukee, St. Paul and Pacific Railroad was incorporated as the Minneapolis and Cedar Valley Railroad on March 1, 1856 (Luecke 1988). The purpose of the railroad was to connect Minneapolis/St. Paul with Milwaukee and Chicago via Prairie du Chien, Wisconsin. Construction began in 1858 in Minneapolis, and although construction was interrupted several times, the first passenger train ran between the Twin Cities and Faribault on December 23, 1865. By that time, the railroad was known as the Minnesota Central Railway (Luecke 1988:1-6). In 1868, the line was completed between Minneapolis and Chicago and was known as the Milwaukee and St. Paul Railway Company, or the "St. Paul" (Prosser 1966).

CONDITION/INTEGRITY

The railroad segment passing through Section 13 is part of the Minnesota Central Railway line that opened in December 1865. On all available historic county plat maps, the railroad is depicted on approximately the same alignment as it is now (Northwest Publishing Company 1900; W. W. Hixson and Company 1916; Webb Publishing Company 1915). The physical appearance of the segment most likely has not changed. There is still a noticeable railroad grade, and the rails and wooden ties are still intact. Because the line is still in use, there is a definite sense of function and destination. The setting is much as it might have been over a hundred years ago, with shrubs and trees separating farmland from the railroad right-of-way. Other historical associations have not been explored as part of this project. However, other properties associated with the Chicago, Milwaukee, St. Paul and Pacific railroad have been recorded in Minnesota, including the passenger depot in Northfield (RC-NFC-244).

SIGNIFICANCE

Level of Significance	Local, State
State Context	Railroads and Agricultural Settlement, 1870 - 1940
NR Eligibility	May be eligible
NR Criteria	Criterion A

The railroad may be significant as one of the first railroads to be built between Faribault and the Twin Cities.

REFERENCES

Luecke, J. C.
1988 *Dreams, Disasters, and Demise: The Milwaukee Road in Minnesota*. Grenadier Publications, Eagan, Minnesota.

North West Publishing Company
1900 *Plat Book of Rice County, Minnesota: Compiled from County Records and Actual Surveys*. Northwest Publishing Company, Philadelphia.

Prosser, R. S.
1966 *Rails to the North Star*. Dillon Press, Minneapolis.

W. W. Hixson and Company
1916 *Plat Book of Minnesota*. W. W. Hixson, Rockford, Illinois.

Webb Publishing Company
1915 *Atlas and farm directory with complete survey in township plats, Rice County, Minnesota*. Webb Publishing Company, St. Paul.

Appendix D

U.S. Fish and Wildlife Correspondence



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Twin Cities Field Office
4101 East 80th Street
Bloomington, Minnesota 55425-1665

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Iowa City Files
16245/Regulatory
Correspondence
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CIVIL/ARCHITECTURE

Ms. Karmen Heim
Civil Engineer
Stanley Consultants, Inc.
Stanley Building
225 Iowa Avenue
Muscatine, Iowa 52761

Dear Ms. Heim:

This responds to your letter dated July 24, 2002, requesting information on federally threatened (T) and endangered (E) species for a proposed 250 MW Combined Cycle Plant Project near Faribault in Rice County, Minnesota. The project site is located in T110N, R21W, Sec.13.

The prairie bush clover (*Lespedeza leptostachya*) (T), and Minnesota dwarf trout lily (*Erythronium propullans*) (E) are listed as federally threatened or endangered in Minnesota and documented to occur in Rice County. However, given the location and type of activity proposed, we have determined that the proposed project as described in your letter is not likely to adversely affect any federally listed or proposed threatened or endangered species or adversely modify their critical habitat. This precludes the need for further action on this project as required under section 7 of the Endangered Species Act of 1973, as amended. However, if the project is modified or new information becomes available which indicates that listed species may occur in the affected area, consultation with this office should be reinitiated.

We appreciate the opportunity to comment and look forward to working with you in the future. If you have questions regarding our comments, please call Mr. Gary Wege of my staff at (612) 725-3548, extension 207.

Sincerely,

Dan P. Stinnett
Field Supervisor

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AUG 13 2002

STANLEY CONSULTANTS
GROUP