

# **MINNESOTA PUBLIC UTILITIES COMMISSION**

## **Pipeline Routing Permit Application**

### **MinnCan Project Minnesota Pipe Line Company**



**January 5, 2006 (Revised)**

**PUC DOCKET NO. PL5/PPL-05-2003**

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## **Statement of Ownership**

**STATEMENT OF OWNERSHIP**

Minnesota Pipe Line Company is a corporation organized and existing under the laws of the State of Delaware and is currently and has been since December 4, 1953 qualified to do business in the State of Minnesota. Minnesota Pipe Line Company will be the owner of the 24 – inch outer diameter pipeline and related facilities proposed in this Routing Permit Application as of the day of filing.

**AFFIDAVIT**

STATE OF MINNESOTA

COUNTY OF DAKOTA

I, Dave Stecher, being first duly sworn, do hereby state that I am the President of Minnesota Pipe Line Company; that I have knowledge of the current plans for the construction of the 24 – inch outer diameter pipeline and related facilities for which Minnesota Pipe Line Company has filed or will file a Pipeline Routing Permit Application, in support of which this Affidavit is provided (the "MinnCan Project"); that there are no plans for any third parties to participate as owners in the MinnCan Project; and that the duly elected officers of Minnesota Pipe Line Company as well as its attorneys and other authorized agents are authorized to act on behalf of Minnesota Pipe Line Company in connection with the MinnCan Project.

FURTHER AFFIANT SAYETH NOT.

*Dave Stecher*

Dave Stecher  
President, Minnesota Pipe Line Company

Signed and sworn to before me on December 29, 2005 by  
Dave Stecher.

*Sheila M. Loucks*

(Signature of notarial officer)

(Seal, if any)

Notary Public

Title )

My commission expires: 01/31/2010



**General Information**  
**(MR 4415.0115)**

4415.0115 **GENERAL INFORMATION**

**Subpart 4. Background Information**

**Each application must contain the following information:**

**A. the applicant's complete name, address and telephone number:**

MinnCan Project  
Minnesota Pipe Line Company  
12555 Clark Road  
Rosemount, Minnesota 55068

Mailing Address:  
P.O. Box 64596  
St. Paul, Minnesota 55164  
(877) 796-7846

**B. the complete name, title, address, and telephone number of the authorized representative or agent to be contacted concerning the applicant's filing:**

Tom Harwell  
Communication Director  
Minnesota Pipe Line Company  
4111 East 37<sup>th</sup> Street North  
Wichita, Kansas 67220  
(877) 796-7846

**C. the signatures and titles of persons authorized to sign the application, and the signature of the preparer of the application if prepared by an outside representative or agent;**

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Larry Van Horn  
Vice President of Operations

**D. a brief description of the proposed project which includes:**

**(1) general location;**

The MinnCan Project consists of the construction of a new 24-inch diameter petroleum pipeline originating at the existing interconnection between Minnesota Pipe Line Company's (MPL) pipeline system and Enbridge's pipeline system in Clearbrook, Minnesota, located in Clearwater County in northwestern Minnesota. The proposed route for the MinnCan Project generally follows adjacent to the MPL pipelines southward from the Clearbrook Station for about 119 miles. Near Cushing, Minnesota in Morrison County, the route diverges from the existing pipeline corridor and follows a "greenfield route" (a new route that does not parallel an existing

pipeline) for another about 176 miles generally west and south of the Twin Cities metropolitan area. The project terminates at the Flint Hills Resources refinery in Rosemount, Minnesota in Dakota County. The Rosemount terminus will provide a direct interconnection with the Flint Hills Resources refinery and a direct interconnection through existing pipeline facilities with the Marathon Petroleum Company St. Paul Park Refinery. In addition, a new pump station is planned to be constructed near the mid-point of the pipeline route (between MPs 140 and 146) in Morrison County. A general location map showing the proposed route of the MinnCan Project is included as Figure 1. Detailed route maps on county highway maps are provided on Figures 2 through 14.

**(2) planned use and purpose;**

Over the next decade Canadian petroleum producers will significantly expand the production of oil sand reserves in Alberta and Saskatchewan. The MinnCan Project will expand the abilities of MPL to bring this Canadian crude oil into the Minnesota market and provide the region with greater capability and flexibility to meet the expanding local demand for gasoline, diesel, jet fuel, asphalt, and other petroleum products (e.g., propane, petroleum coke). Because the existing pipeline system into the Twin Cities area is at maximum capacity, it cannot accommodate the additional volumes of oil from Canada. The MinnCan Project will provide additional volumes of Canadian crude oil to Twin Cities-area refineries, which will help meet a growing demand for fuels in the region.

**(3) estimated cost;**

The cost of constructing the MinnCan Project is currently estimated to be about \$300 million.

**(4) planned in-service date; and**

MPL is currently making preparations to seek permits and approvals from the appropriate regulatory authorities to allow construction of the MinnCan Project in 2007. The anticipated in-service date for the MinnCan Project is early 2008.

**(5) general design and operational specifications for the type of pipeline for which an application is submitted.**

The proposed pipeline will consist of a 24-inch diameter steel pipe with a maximum allowable operating pressure will be 1,462 pounds per square inch. The proposed pipeline will have a design capacity ranging from 60,000 barrels per day to 165,000 barrels per day.

**Proposed Pipeline & Associated Facilities  
(MR 4415.0120)**

4415.0120 **DESCRIPTION OF PROPOSED PIPELINE AND ASSOCIATED FACILITIES**

**Subpart 1. 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:

- A. **pipe size (outside diameter) in inches;**  
24 inches
- B. **pipe type;**  
Electric Resistant Weld (ERW)
- C. **nominal wall thickness in inches;**  
Ranges from 0.350 to 0.500 inch
- D. **pipe design factor;**  
0.72
- E. **longitudinal or seam joint factor;**  
1.0
- F. **class location and requirements, where applicable;**  
Not applicable
- G. **specified minimum yield strength in pounds per square inch (psi); and**  
Ranges from 52,000 to 70,000 psi
- H. **tensile strength in pounds per square inch.**  
Ranges from a minimum of 66,000 psi to 82,000 psi

**Subpart 2. Operating Pressure.**

**Operating pressure must include:**

- A. **operating pressure (psi);**  
1,462 psi
- B. **maximum allowable operating pressure (psi).**  
1,462 psi

**Subpart 3. Description of associated facilities.**

**For public information purposes, the applicant shall provide a general description of all pertinent associated facilities on the right-of-way.**

The MinnCan Project will consist of about 295 miles of 24-inch diameter steel, underground pipe and associated aboveground facilities (e.g., pump stations, meter stations). Two pump stations are planned for the MinnCan Project. The originating station will be located inside of MPL's Clearbrook Station in Clearwater County. The mid-point pump station will be located in Morrison County near Upsala, Minnesota.

Major equipment and facilities at each pump station site will consist of:

- Three to four single or two stage centrifugal pumps, each driven by 2,000 to 3,500 horsepower electric motors;
- A building to house the electrical switchgear and controls for the station;
- High voltage and low voltage transformers for power to the station;
- Manifold piping, valves, and sump;
- Satellite dish for communications; and
- Perimeter fence and camera for security.

Other than electrical power, the stations will not require additional utilities. The mid-point facility will not be manned and access gates will be locked for security. The operations at both facilities will be under 24 hours per day, 7 days per week surveillance from MPL's Pipeline Control Center in Wichita, Kansas.

In addition to these two pump stations, new aboveground facilities will also be needed at the Clearbrook Station and at the Flint Hills Resources refinery. Facilities other than the pump station planned for the Clearbrook Station include:

- Piping facilities to tie into existing storage tanks and centrifugal pumps;
- Metering facilities;
- Communications and electric equipment to support these facilities; and
- A trap for launching pigs

Facilities planned for the MPL delivery point site at the Flint Hills Resources refinery include:

- Custody transfer metering system and sampling system;
- Building to house metering and sampling system; and
- A trap for receiving pigs.

The location of the mid-point station has been preliminarily identified between MPs 140 and 146. The actual location of this pump station site will be determined based on the ability to secure sufficient property for the site within an area

determined by hydraulic modeling of the pipeline. Criteria for selecting an appropriate site include availability of electrical power, access to public roads, and distance from adjacent residences. The facilities at pump stations typically cover approximately 1 to 2 acres.

Because the proposed facilities at the Clearbrook Station and Flint Hills Resources refinery will be sited within the existing properties of these facilities, no additional land will be acquired for the proposed facilities. The actual locations within the existing facilities will be determined during the detailed design and engineering phase.

The project will also include the placement of mainline valves over the length of the pipeline and on either side of the major river crossings (*i.e.*, greater than 100 feet across from high water mark to high water mark). A fenced area at each valve will be provided for security purposes. The valves and fenced areas will be located within the permanent right-of-way and may include an access road from the nearest public roadway.

**Subpart 4. Product capacity information.**

**The applicant shall provide information on planned minimum and maximum design capacity or throughput in the appropriate unit of measure for the types of products shipped as defined in part 4415.0010.**

Minimum: 60,000 barrels per day  
Maximum: 165,000 barrels per day

**Subpart 5. Product description.**

**The applicant shall provide a complete listing of products the pipeline is intended to ship and a list of products the pipeline is designed to transport, if different from those intended for shipping.**

Petroleum crude oil

**Subpart 6. Material safety data sheet.**

**For each type of product that will be shipped through the pipeline, the applicant shall provide for public information purposes the material identification, ingredients, physical data, fire and explosive data, occupational exposure limits, health information, emergency and first aid procedures, transportation requirements, and other known regulatory controls.**

A Material Safety Data Sheet for typical petroleum crude oil that will be transported through the proposed pipeline is attached.

**Attachment 4415.0120**  
**Material Safety Data Sheet**



## MATERIAL SAFETY DATA SHEET

### 1 CHEMICAL PRODUCT & COMPANY IDENTIFICATION

TRADE NAME(S) **CRUDE OIL**  
CAS NUMBER 8002-05-9  
MSDS NUMBER 9191  
PRODUCT CODE ND  
SYNONYM(S) PETROLEUM CRUDE  
MANUFACTURER / SUPPLIER Flint Hills Resources, LP  
P.O. Box 64596  
St. Paul, MN  
55164-0596

#### TELEPHONE NUMBERS - 24 HOUR EMERGENCY ASSISTANCE

Chemtec 800-424-9300  
Flint Hills Resources, LP 651-437-0676

#### TELEPHONE NUMBERS - GENERAL ASSISTANCE

8-5 (M-F, CST) 651-437-0700  
8-5 (M-F, CST) MSDS Assistance 316-828-7988

### 2 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS Number	Concentration*	Exposure Limits / Health Hazards
CRUDE OIL	8002-05-9	100 %	Petroleum Distillates: 500 ppm 8-Hour TWA (OSHA)
N-HEXANE	110-54-3	0 - 8 %	500 ppm 8-Hour TWA (OSHA) 50 ppm 8-Hour TWA (ACGIH)
BENZENE	71-43-2	0 - 5 %	1 ppm 8-Hour TWA (OSHA) 5 ppm 15-Min STEL (OSHA) 0.5 ppm 8-Hour TWA (ACGIH) 2.5 ppm 15-Min STEL (ACGIH)
TOLUENE	108-88-3	0 - 5 %	200 ppm 8-Hour TWA (OSHA) 300 ppm CEILING (OSHA) 50 ppm 8-Hour TWA (ACGIH)
XYLENES	1330-20-7	0 - 5 %	100 ppm 8-Hour TWA (OSHA) 100 ppm 8-Hour TWA (ACGIH) 150 ppm 15-Min STEL (ACGIH)

Ingredient Name	CAS Number	Concentration*	Exposure Limits / Health Hazards
HYDROGEN SULFIDE	7783-06-4	0 - 4 %	20 ppm CEILING (OSHA) 10 ppm 8-Hour TWA (ACGIH) 15 ppm 15-Min STEL (ACGIH)
ETHYLBENZENE	100-41-4	0 - 3 %	100 ppm 8-Hour TWA (OSHA) 100 ppm 8-Hour TWA (ACGIH) 125 ppm 15-Min STEL (ACGIH)
POLYCYCLIC AROMATIC COMPOUNDS (SARA - E649749)	NA	< 0.1 %	Coal Tar Pitch Volatiles, As Benzene Solubles: 0.2 mg/m <sup>3</sup> 8-Hour TWA (OSHA) 0.2 mg/m <sup>3</sup> 8-Hour TWA (ACGIH)

\*Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

### COMPOSITION COMMENTS

This Material Safety Data Sheet is intended to communicate potential health hazards and potential physical hazards associated with the product(s) covered by this sheet, and is not intended to communicate product specification information. For product specification information, contact your Flint Hills Resources, LP representative.

## 3 HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

WARNING!

#### HEALTH HAZARDS

MAY RELEASE TOXIC HYDROGEN SULFIDE VAPORS - DO NOT RELY ON ODOR FOR WARNING  
 GAS MAY ACCUMULATE IN CONFINED SPACES  
 ASPIRATION HAZARD IF SWALLOWED-CAN ENTER LUNGS AND CAUSE DAMAGE  
 OVEREXPOSURE MAY CAUSE CNS DEPRESSION  
 MAY BE IRRITATING TO THE SKIN, EYES AND RESPIRATORY TRACT  
 CONTAINS MATERIAL WHICH CAN CAUSE REPRODUCTIVE EFFECTS  
 SKIN CANCER HAZARD BASED ON TESTS WITH LABORATORY ANIMALS  
 DANGER-CONTAINS BENZENE-CANCER HAZARD  
 MAY CAUSE BLOOD DISORDERS  
 SEE "TOXICOLOGICAL INFORMATION" (SECTION 11) FOR MORE INFORMATION

#### FLAMMABILITY HAZARDS

FLAMMABLE  
 PER OSHA GUIDELINES, 29 CFR 1910.1200(c)

#### REACTIVITY HAZARDS

STABLE

## **POTENTIAL HEALTH EFFECTS, SKIN**

MODERATE TO SEVERELY IRRITATING.

Contact may cause reddening, itching and inflammation.

Defatting agent. Repeated or prolonged contact may result in drying, reddening, itching, pain, inflammation, cracking and possible secondary infection with tissue damage.

Absorption from prolonged or repeated skin contact may cause systemic toxicity.

May cause an allergic reaction in some individuals.

Contact with heated material may cause thermal burns.

## **POTENTIAL HEALTH EFFECTS, EYE**

May cause eye irritation. Exposure to vapors, fumes or mists may cause irritation. Direct contact may cause irritation, redness, tearing and blurred vision. Prolonged or repeated exposure may cause irritation and conjunctivitis.

Contact with heated material may cause thermal burns, destruction of eye tissue and possible permanent injury or blindness.

## **POTENTIAL HEALTH EFFECTS, INHALATION**

Breathing of the mists, vapors or fumes may irritate the nose, throat and lungs. Symptoms may include sore throat, coughing, labored breathing, sneezing and burning sensation, depending on the concentration and duration of exposure.

May cause central nervous system depression or effects. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

Exposure to high concentrations of mists may lead to oil chemical pneumonia. May release hydrogen sulfide gas which is highly toxic. Hydrogen sulfide can cause respiratory paralysis and death, depending on the concentration and duration of exposure. Do not rely on ability to smell vapors, since odor fatigue rapidly occurs. Effects of overexposure include irritation of the nose and throat, nausea, vomiting, diarrhea, abdominal pain and signs of nervous system depression (e.g. headache, drowsiness, dizziness, loss of coordination and fatigue), irregular heartbeats, pulmonary edema, weakness and convulsions.

Components have been shown to be weak cardiac sensitizers which can result in cardiac arrhythmia and ventricular fibrillation.

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

Other specific symptoms of exposure are listed under "Toxicological Information" (Section 11).

## **POTENTIAL HEALTH EFFECTS, INGESTION**

May cause irritation of the mouth, throat and gastrointestinal tract. Symptoms may include salivation, pain, nausea, vomiting and diarrhea.

Aspiration into lungs may cause chemical pneumonia and lung damage.

Exposure may also cause central nervous system symptoms similar to those listed under "Inhalation" (see Inhalation section).

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

Other specific symptoms of exposure are listed under "Toxicological Information" (Section 11).

## **4 FIRST AID MEASURES**

### **SKIN**

For cold material, immediately wash skin with plenty of soap and water while removing contaminated clothing and shoes. Get medical attention if irritation persists.

When burned from contact with hot material, immerse or flush skin immediately with large amounts of cold water. Cover with clean cotton sheeting or gauze and get immediate medical attention.

Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.

### **EYE**

Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Get medical attention if irritation persists.

Burns due to contact with heated material require immediate medical attention.

### **INHALATION**

Safely remove the victim from exposure. **DO NOT ATTEMPT TO RESCUE WITHOUT ADEQUATE PROTECTIVE GEAR AND PROPER TRAINING.** Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear and give oxygen.

Keep affected person warm and at rest. **GET IMMEDIATE MEDICAL ATTENTION.**

### **INGESTION**

Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips to prevent aspiration and monitor for breathing difficulty. Gastric lavage should be performed only by qualified medical personnel.

Keep affected person warm and at rest. **GET IMMEDIATE MEDICAL ATTENTION.**

## NOTES TO PHYSICIAN

Gastric lavage may be indicated if ingested. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

Hydrogen sulfide is primarily a respiratory toxin inhibiting the cytochrome oxidase system; it is probably more potent than HCN. The lifetime of sulfide in oxygenated blood is short and sulfmethemoglobin is rapidly detoxified by red blood cells and the liver. If nitrites have been used for detoxification, check methemoglobin levels. Follow fluid and electrolyte balance carefully since metabolic acidosis may occur from increased anaerobic metabolism. Watch for pulmonary edema and aspiration pneumonia during convalescence.

Hydrocarbons may sensitize the heart to epinephrine and other circulating catecholamines so that arrhythmias may occur. Careful consideration of this potential adverse effect should precede administration of epinephrine or other cardiac stimulants and the selection of bronchodilators.

In cases of acute poisoning, artificial respiration with administration of oxygen may be useful for support. **DO NOT GIVE EPINEPHRINE, EPHEDRINE OR SIMILAR ADRENERGIC DRUGS. THEY MAY INDUCE FATAL VENTRICULAR FIBRILLATION.** Electrocardiographic monitoring should be carried out with severely ill patients to anticipate possible cardiac arrest.

Anemia may require the usual supportive measures. Medical evaluation of acute overexposure should include hematological determinations until stable. In severe acute and chronic poisoning, both renal and hepatic damage may occur and should be anticipated in such cases. Respiratory and pulmonary problems may require special attention. After severe acute symptoms have been alleviated, it may be advisable to consider periodic monitoring of the patient until such time as the likelihood of other adverse effects can be discounted.

## 5 FIRE FIGHTING MEASURES

### HAZARDOUS COMBUSTION PRODUCTS

Combustion may produce hazardous combustion products such as CO<sub>x</sub>, NO<sub>x</sub>, SO<sub>x</sub>, reactive hydrocarbons, irritating vapors and oxides of sulfur.

### EXTINGUISHING MEDIA

Use water spray, dry chemical, carbon dioxide or fire-fighting foam for Class B fires to extinguish fire.

### BASIC FIRE FIGHTING PROCEDURES

Evacuate area and fight fire from a safe distance.

If leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapor and to protect personnel attempting to stop a leak.

Use water spray to cool adjacent structures and to protect personnel. Shut off source of flow if possible. Stay away from storage tank ends. Withdraw immediately in case of rising sound from venting safety device or any discoloration of storage tank due to fire.

Firefighters must wear NIOSH approved positive pressure breathing apparatus (SCBA) with full face mask and full protective equipment.

### UNUSUAL FIRE & EXPLOSION HAZARDS

Vapors may form explosive mixture with air. Vapors can travel to a source of ignition and flash back.

Explosion hazard if exposed to extreme heat or to physical or thermal shock.

Flash Point	> -40 °F (>-40 °C)
Autoignition Temperature	ND
Flammability Limits in Air, Lower, % by Volume	1 %
Flammability Limits in Air, Upper, % by Volume	10 %

## 6 ACCIDENTAL RELEASE MEASURES

### EMERGENCY ACTION

Eliminate and/or shut off ignition sources and keep ignition sources out of the area. Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind. Isolate for 800 meters (1/2 mile) in all directions if tank, rail car or tank truck is involved in fire. Evacuate area endangered by release as required. (See Exposure Controls/Personal Protection, Section 8.)

### ENVIRONMENTAL PRECAUTIONS

Eliminate all sources of ignition. Isolate hazard area and deny entry.

If material is released to the environment, take immediate steps to stop and contain release. Caution should be exercised regarding personnel safety and exposure to the released material. Notify local authorities and the National Response Center, if required.

### SPILL OR LEAK PROCEDURE

Keep unnecessary people away. Isolate area for at least 25 to 50 meters (80 to 160 feet) to preserve public safety. For large spills, consider initial evacuation for at least 300 meters (1000 feet).

Keep ignition sources out of area and shut off all ignition sources. Absorb spill with inert material (e. g. dry sand or earth) then place in a chemical waste container. Large Spills: Dike far ahead of liquid spill for later disposal.

Use a vapor suppressing foam to reduce vapors. Stop leak when safe to do so.

See Exposure Controls/Personal Protection (Section 8).

## 7 HANDLING & STORAGE

### HANDLING

Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Do not cut, grind, drill, weld or reuse containers unless adequate precautions are taken against these hazards.

Do not eat, drink or smoke in areas of use or storage.

### STORAGE

Store in tightly closed containers in a cool, dry, isolated, well-ventilated area away from heat, sources of ignition and incompatibles. Avoid contact with strong oxidizers.

Empty containers may contain material residue. Do not reuse without adequate precautions.

Hydrogen sulfide can build up in the head space of storage vessels containing this material. Use appropriate respiratory protection to prevent exposure. See Exposure Controls/Personal Protection (Section 8).

When entering a storage vessel that has previously contained this material, it is recommended that the atmosphere be monitored for the presence of hydrogen sulfide. See Composition Information (Section 2) for exposure limits.

Do not eat, drink or smoke in areas of use or storage.

## 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### ENGINEERING CONTROLS

Ventilation and other forms of engineering controls are the preferred means for controlling exposures.

Generally, this material is contained within vessels and piping designed to withstand expected operating conditions. Certain operations, such as loading, unloading and on-line sampling, generally involve higher risk of exposure, and special equipment is often designed for these activities.

### EYE PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Keep away from eyes. Eye contact can be avoided by using chemical safety glasses, goggles, and/or face shield. Have eye washing facilities readily available where eye contact can occur.

### SKIN PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Avoid skin contact with this material. Use appropriate chemical protective gloves when handling. Additional protective clothing may be necessary.

Good personal hygiene practices such as properly handling contaminated clothing, using wash facilities before entering public areas and restricting eating, drinking and smoking to designated areas are essential for preventing personal chemical contamination.

### RESPIRATORY PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

A NIOSH approved air purifying respirator with an appropriate cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. The use of air purifying respirators is not recommended where hydrogen sulfide levels may exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

## 9 PHYSICAL & CHEMICAL PROPERTIES

### ODOR AND APPEARANCE

BLACK, BROWN OR GREENISH LIQUID WITH AROMATIC OR PETROLEUM ODOR

Boiling Point	< 100 °F (<38 °C)
Specific Gravity	0.7 - 0.95 at 60/60 °F (15.6/15.6 °C)
Melting Point	NA
Percent Volatile	ND
Vapor Pressure	ND
Vapor Density	> 1
Bulk Density	5.84 - 7.85 LB/GAL
Solubility in Water	INSOLUBLE
Octanol/Water Partn	ND
Volatile Organic	ND
Pour Point	VARIES
pH Value	ND
Freezing Point	ND
Viscosity	VARIES
Evaporation Rate	VARIABLE

Molecular Formula	MIXTURE
Molecular Weight	NA
Chemical Family	HYDROCARBON MIXTURE
Odor Threshold	0.1 - 0.5 ppm

## 10 STABILITY & REACTIVITY

### STABILITY/INCOMPATIBILITY

Incompatible with strong acids, strong alkalis and oxidizers. See precautions under Handling & Storage (Section 7).

### HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS

Combustion may produce CO<sub>x</sub>, NO<sub>x</sub>, SO<sub>x</sub>, reactive hydrocarbons, irritating vapors, oxides of sulfur, and other decomposition products in the case of incomplete combustion.

## 11 TOXICOLOGICAL INFORMATION

### ROUTES OF EXPOSURE

Inhalation, ingestion, skin and eye contact.

### LD50

LD50 - No specific data

### LC50

LC50 - No specific data

## **TOXICOLOGICAL DATA**

Exposure to components of this material may cause the following specific symptoms, depending on the concentration and duration of exposure: skin pigmentation changes, hyperkeratosis, folliculitis, warts, and anemia.

Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: liver, kidney, eye, skin, blood elements, nervous and respiratory system.

Irritating and toxic hydrogen sulfide gas may be found in confined vapor space. WARNING - "rotten egg" odor of hydrogen sulfide is not a reliable indicator for warning of exposure since odor fatigue readily occurs. Odor sensation lost immediately at concentrations greater than 150 ppm. Avoid exposures to hydrogen sulfide gases. Hydrogen sulfide causes rapid death due to metabolic asphyxiation. Case reports suggest that toxic amounts can enter the body through a punctured eardrum, even while wearing some types of respiratory protective equipment.

This material may contain n-hexane. n-Hexane is a skin, eye and respiratory tract irritant. It is a cardiac sensitizer, central nervous system depressant and a neurotoxin. Acute exposure may result in dizziness, asphyxia, anesthesia, brain damage and cardiac arrest at high concentrations. Repeated or prolonged exposure may result in peripheral neuropathy, characterized by progressive weakness, facial and limb numbness, color vision abnormalities and paralysis of the limbs. It has been observed to cause damage to the testes and fetal effects in a two generation animal study. NTP has reported it to cause liver tumors in female mice. Persons with skin, lung, liver or kidney disorders may be at increased risk.

This material may contain toluene. Toluene is an eye, skin, and respiratory tract irritant as well as a central nervous system depressant. Overexposure may result in damage to the brain, liver, kidney, cardiovascular, respiratory and neurological systems. Prolonged and repeated exposure may result in behavioral effects, anemia, and color vision abnormalities, blindness and hearing loss. It has been shown to produce reproductive effects in both humans and laboratory animals. It has also been reported to produce cardiac sensitization. Repeated or prolonged exposure to toluene may result in skin absorption, which may result in toxic effects. IARC has determined that there is inadequate evidence for the carcinogenicity of toluene in humans and experimental animals (IARC Class 3).

This material may contain benzene. Acute benzene poisoning causes central nervous system depression. Chronic exposure affects the hematopoietic system causing blood disorders including anemia and pancytopenia.

## **CARCINOGENICITY**

IARC has determined that there is limited evidence for the carcinogenicity of crude oil in experimental animals and inadequate evidence in humans.

This material contains polynuclear aromatic hydrocarbons. Repeated or prolonged exposure to some PAHs has been associated with effects to the liver, kidneys, immune system and skin with warty growths, skin burns, pigmentation of the bare skin and cornification of the surface layers. They have also been associated with anemia, photosensitivity, leukoplakia (white patches on the tongue, cheek or gums), edema of the eyelids, conjunctival hyperemia, lacrimation, photophobia, headache, loss of appetite, vital powers and strength, cough, bronchitis and nausea. Some PAHs have been shown to be carcinogenic after prolonged or repeated skin contact in laboratory animals.

This material may contain benzene. Benzene is carcinogenic to laboratory animals when given by intubation or by inhalation. There is an association between occupational exposure to benzene and human leukemia. Carcinogenic determinations: IARC human positive and animal suspected carcinogen (IARC Class 1); NTP known carcinogen; ACGIH suspected carcinogen; OSHA carcinogen. (IARC Class 1)

This material may contain ethylbenzene. IARC has determined that there is sufficient evidence for the carcinogenicity of ethylbenzene in experimental animals and inadequate evidence for the carcinogenicity of ethylbenzene in humans. (IARC Class 2B)

## **TERATOGENICITY, MUTAGENICITY, OTHER REPRODUCTIVE EFFECTS**

This material contains components which may cause adverse reproductive and/or developmental effects.

This material may contain benzene. Mutagenic and clastogenic in mammalian and non-mammalian test systems. Reproductive or developmental toxicant only at doses that are maternally toxic, based on tests with animals.

Pregnant women may be at an increased risk from exposure.

Consumption of alcoholic beverages may enhance toxic effects.

## **SENSITIZATION TO MATERIAL**

The possibility of allergic sensitization should be considered.

## **PRE-EXISTING CONDITIONS AGGRAVATED BY EXPOSURE**

Pre-existing medical conditions which may be aggravated by exposure include disorders of the eye, skin, liver, kidney, blood, respiratory, cardiovascular and nervous system.

## **SYNERGISTIC MATERIALS**

ND

# 12 ECOLOGICAL INFORMATION

## **ECOTOXICOLOGICAL INFORMATION**

If released to water, this material will float. Material is insoluble in water.

# 13 DISPOSAL CONSIDERATIONS

## **WASTE DISPOSAL**

This material, as supplied, when discarded or disposed of, is a listed hazardous waste according to Federal Regulations 40 CFR 261.33(f) and a characteristic hazardous waste as defined in Subpart C of 40 CFR 261. Additionally, pursuant to 40 CFR 261.33(d) and (e), any residue remaining in a container that has held this material and any residue or contaminated soil, water or other debris resulting from the cleanup of a spill of this material is also a listed hazardous waste. Under RCRA, it is the responsibility of the user of the material to determine, at the time of disposal, whether the material meets RCRA criteria for hazardous waste.

The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be conducted in compliance with all federal, state and local regulations.

# 14 TRANSPORT INFORMATION

## **BILL OF LADING - BULK (U. S. DOT)**

Not Determined

## **COMMENTS**

See Bill of Lading for proper shipping description, or consult 49 CFR 100-185 for specific shipping information.

## 15 REGULATORY INFORMATION

### FEDERAL REGULATIONS

All ingredients are on the TSCA inventory, or are not required to be listed on the TSCA inventory.

Consult OSHA's Benzene standard 29 CFR 1910.1028 for provisions on air monitoring, employee training, medical monitoring, etc.

A release of this material, as supplied, may be exempt from reporting under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA - 40 CFR 302) by the petroleum exclusion. Releases may be reportable to the National Response Center (800-424-8802) under the Clean Water Act, 33 U.S.C. 1321(b)(3) and (5)

This material, as supplied, may contain hydrogen sulfide, an Extremely Hazardous Substance (EHS) per 40 CFR Part 355, and is therefore subject to the release reporting requirements of EPCRA. The reportable quantity for hydrogen sulfide is 100 pound(s).

This material contains toxic chemical(s) in excess of the applicable de minimis concentration that are subject to the annual toxic chemical release reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372).

This material contains substances subject to accident prevention regulations when present above the applicable threshold quantities (Section 112(r) of the Clean Air Act).

This material contains up to 100% volatile organic compounds (VOCs) per 40 CFR Part 51.100. This material contains up to 26% hazardous air pollutants (HAPs) per Section 112 Clean Air Act Amendments of 1990.

Check local, regional or state/provincial regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to report may result in substantial civil and criminal penalties.

### STATE REGULATIONS

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

#### SARA 311/312 HAZARD CATEGORIES

Immediate Hazard:	X	Delayed Hazard:	X	Fire Hazard:	X	Pressure Hazard:	-
Reactivity Hazard:	-						

#### NFPA RATINGS

Health	2	Flammability	3	Reactivity	0	Special Hazards	-
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#### HMIS RATINGS

Health	2*	Flammability	3	Reactivity	0
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#### Following ingredients of this material are listed in SARA 313 above the de minimis concentration

SARA Listed Ingredient Name	CAS Number
N-HEXANE	110-54-3
BENZENE	71-43-2
TOLUENE	108-88-3
XYLENES	1330-20-7
ETHYLBENZENE	100-41-4

## 16 OTHER INFORMATION

**DISCLAIMER**

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, an MSDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.

Current Revision Date 07-Apr-2004

Replaces Sheet Dated 10-Jan-2003

Completed By Flint Hills Resources, LP - Operations EH&S

## **Land Requirements**

**(MR 4415.0125)**

4415.0125 **LAND REQUIREMENTS**

**For the proposed pipeline, the applicant shall provide the following information:**

**A. permanent right-of-way length, average width, and estimated acreage:**

The proposed pipeline will be constructed generally adjacent to the existing MPL pipeline right-of-way for the northernmost 119 miles of the MinnCan Project with the exception of a 7-mile-long greenfield route around the City of Staples. The remaining 176 miles of the project will be located along a greenfield route to avoid environmentally sensitive areas and developed areas near the Twin Cities metropolitan area. Currently, the maintained right-of-way along the existing MPL pipelines varies from 65 to 70 feet in width. The proposed pipeline is anticipated to expand the maintained MPL right-of-way by about 35 feet, which will result in about 476 acres of additional maintained right-of-way along the 112 miles of the proposed route that will be adjacent to the existing pipelines. Where the proposed route is not located adjacent to the existing pipelines, MPL is planning to maintain a permanent right-of-way of 50 feet in width. About 1,104 acres of land will be within the permanent right-of-way of the pipeline segment within the greenfield route. In total, the MinnCan Project will result in an additional 1,580 acres of maintained and permanent pipeline right-of-way.

The mid-point pump station facilities will also require the about 1 to 2 acres of land for construction and operation of this facility. The other aboveground facilities (e.g., originating pump station, meter facilities) will either be sited within the maintained and permanent pipeline right-of-way or within the property area of existing facilities (i.e., Clearbrook Station, Flint Hills Resources refinery)

**B. temporary right-of-way (workspace) length, estimated width, and estimated acreage:**

Construction of the proposed project is anticipated to require a 100-foot-wide construction right-of-way at most locations. Assuming that about 50 feet of this construction right-of-way will be temporary workspace for the greenfield portion of the project and 30 feet where the route parallels the existing pipeline of the route, the total estimated acreage of temporary workspace for the 294.6 miles of pipeline is about 1,515 acres. The typical construction right-of-way schematics for the areas adjacent to the existing pipelines and along the greenfield route are provided on Figures 17 and 18.

Additional temporary work spaces are anticipated to be needed at other locations where the project will cross features such as waterbodies, roads, railroads, sideslopes, and other special circumstances. This extra space is necessary for staging equipment and stockpiling spoil material to facilitate construction of the pipeline. Typical schematics showing the dimensions

the general locations and dimensions of the temporary extra workspaces are provided in Appendix A of the Environmental Assessment Supplement. Based on the dimensions provided on these figures and the number of features crossed by the proposed route, construction of the MinnCan Project will affect about 430 acres of temporary work spaces outside of the construction right-of-way.

**C. estimated range of minimum trench or ditch dimensions including bottom width, top width, depth, and cubic yards of dirt excavated:**

The MinnCan Project will include the installation of a 24-inch-diameter pipeline. On agricultural lands along the greenfield route, the pipeline will be covered with 4.5 feet of soil, which will require the bottom of the trench to be at least 6.5 feet deep. Assuming typically a 3-foot-wide trench (top and bottom) in most soil types crossed by the project and an estimated pipeline length of about 135 miles in agricultural lands along the greenfield portions of the pipeline route, construction of the pipeline will result in the excavation of approximately 510,000 cubic yards of soil.

On the other 160 miles of the proposed pipeline, including the portion of the route adjacent to the existing MPL pipelines and in non-agricultural lands along the greenfield route, the pipeline will have a depth of cover of about 3 feet, which will require the bottom of the trench to be about 5 feet deep. Assuming a 3-foot-wide trench, construction of the pipeline will result in the excavation of an additional 470,000 cubic yards of soil on these portions of the route.

The total volume of soil that is estimated to be excavated for the entire pipeline trench is about 980,000 cubic yards.

**D. minimum depth of cover for state and federal requirements:**

Minnesota Statute § 116I.06, subd. 1 requires that the pipeline be installed with a minimum cover of 4.5 feet in all areas where the pipeline crosses the right-of-way of any public drainage facility or any county, town, or municipal street or highway and where the pipeline crosses cultivated agricultural land. In cultivated agricultural land along the existing pipeline route, MPL will seek a depth requirement waiver from the affected landowners to install the pipeline at the same depth as the existing adjacent pipelines. In all other areas, the pipeline will be installed at depths that meet or exceed U.S. Department of Transportation regulations (CFR 49, Part 195.248).

**E. right-of-way sharing or paralleling: type of facility in the right-of-way, and the estimated length, width, and acreage of the right-of-way:**

Approximately 112 miles of the 295-mile route will be installed adjacent to MPL's existing pipelines. About 35 feet of the 100-foot-wide construction right-of-way will overlap with MPL's existing maintained right-of-way,

resulting in about 475 acres of shared pipeline right-of-way for construction of the project. The proposed pipeline route departs from the MPL right-of-way near the City of Staples (between approximate MPs 98 and 105) and at about MP 119 in Morrison County where it will be located mostly along a greenfield route. Along the greenfield portion of the route, the proposed pipeline will parallel approximately 7 miles of an electric transmission line between MPs 286.0 to 287.4 and MPs 288.2 to 293.8. In addition, approximately 6.7 miles of the pipeline route parallels existing road rights-of-ways, primarily in Scott and Dakota Counties.

**Project Expansion  
(MR 4415.0130)**

4415.0130 **PROJECT EXPANSION**

**If the pipeline and associated facilities are designed for expansion in the future, the applicant shall provide a description of how the proposed pipeline and associated facilities may be expanded by looping, by additional compressor and pump stations, or by other available methods.**

The proposed pipeline system could be expanded to generate additional throughput by adding additional pump stations along the system. An ultimate design with eight pump stations would have a maximum throughput capacity of approximately 350,000 barrels per day, depending on the characteristics of the crude oil.

**ROW Preparation  
(MR 4415.0135)**

4415.0135 **RIGHT-OF-WAY PREPARATION PROCEDURES AND CONSTRUCTION  
ACTIVITY SEQUENCE**

**Each applicant shall provide a description of the general right-of-way preparation procedures and construction activity sequence anticipated for the proposed pipeline and related facilities.**

This section provides a general overview of the typical construction sequence for a pipeline. The associated aboveground facilities will be constructed concurrently with the pipeline toward the end of the construction period. Because all the aboveground facilities except the mid-point pump station will be constructed within the construction right-of-way or existing facilities, the construction activities related to these facilities will be primarily limited to previously disturbed or developed areas.

Figure 19 shows the typical steps of cross-country pipeline construction. Standard pipeline construction proceeds in the manner of an outdoor assembly line composed of specific activities that make up the linear construction sequence. These operations collectively include survey and staking of the right-of-way, clearing and grading, topsoil stripping, pipe stringing and bending, welding and coating, trenching, lowering-in and backfilling, hydrostatic testing, cleanup, and restoration and revegetation.

**Survey and Staking**

Before construction, MPL crews will survey and stake the centerline and exterior boundaries of the construction right-of-way. The exterior boundary stakes will mark the limit of approved disturbance areas, which will be maintained throughout the construction period. The Gopher State One Call system will be contacted to identify and mark the locations of underground utilities. During this period, equipment involved in pipeline construction will be moved onto the right-of-way using existing roads for access wherever practicable.

**Clearing and Grading**

MPL will clear the 100-foot-wide construction right-of-way and temporary extra workspaces of shrubs and trees. In the absence of other agency regulations or the preferences of private landowners, trees will be stockpiled to the side or removed from the right-of-way before any soil disturbance activities in order to prevent soil mixing with cut timber. Landowners will be given the option to take custody of the timber which has been cut down.

Following clearing, grading of the ground surface may be done to provide a relatively smooth working surface and a safe working area. Typically, a 10-foot-wide buffer will be left relatively undisturbed at waterbody crossings until immediately before the pipeline is installed across the waterbody.

Following clearing and grading, temporary bridges will be installed at waterbodies along the pipeline route to provide temporary access for equipment traveling along the construction right-of-way. In addition, temporary erosion control measures will

be installed in accordance with MPL's Upland Erosion Control, Revegetation, and Maintenance Plan (Erosion Control Plan)

### **Topsoil Stripping**

Topsoil will be stripped and segregated in agricultural areas along the pipeline route in accordance with MPL's Agricultural Impact Mitigation Plan (AIMP). In unsaturated wetlands, a maximum of 12 inches of surficial soils will also be stripped from the trench area.

### **Stringing and Bending**

Before excavating the pipeline trench, individual joints of pipe will be strung along the construction right-of-way and arranged to be accessible to construction personnel. This operation typically involves specially designed stringing trucks to deliver pipe from the pipe yard to the right-of-way. Small portable cranes and/or side-boom tractors are used to unload the stringing trucks and place the pipe along the right-of-way. A mechanical pipe-bending machine will bend individual joints of pipe to the desired angle to accommodate changes in the natural ground contour or pipeline alignment. In certain areas, prefabricated fittings will be used where field bending is not practicable.

### **Welding and Coating**

After stringing and bending are complete, pipe sections will be aligned, welded together, and placed on temporary supports along the edge of the trench. MPL will inspect the welds, both visually and radiographically. The pipe is typically delivered with a factory coating of fusion-bonded epoxy or similar material to prevent corrosion. MPL will apply coating at welded joints and will electronically inspect the pipeline coating before the pipe is lowered into the trench.

### **Trenching**

Backhoes and/or ditching machines will be used to excavate a trench approximately 5 to 6.5 feet deep. The trench walls will generally be kept vertical to the extent practicable and the trench will typically be 3 feet wide. In unstable and saturated soils, the trench could be wider.

Where trench dewatering is needed, water will be discharged directly to the ground if there is adequate vegetation along the right-of-way to filter the water effectively. Where vegetation is sparse or absent, or in environmentally sensitive areas (e.g., adjacent to streams or wetlands), straw bale dewatering structures or suitable filtering alternatives will be used to minimize siltation in adjacent waterbodies.

### **Lowering-in and Backfilling**

After welding and coating are completed and the trench is excavated, the pipe will be lowered into the trench by side-boom tractors. Bladed equipment or a specially designed backfilling machine will be used to backfill the trench to the approximate ground surface elevation. Construction debris, including wooden supports, welding rods, containers, brush, trees, or refuse of any kind, will not be permitted in the backfill. If an excessive amount of rocks are present in the backfill, the pipeline will be protected with rock shield or similar protective coating and/or backfilled with clean padding prior to backfilling with the rocky material.

### **Hydrostatic Testing**

After backfilling, MPL will hydrostatically test the pipeline in accordance with the Office of Pipeline Safety (OPS) within the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations to ensure that the system is capable of operating at the design pressure. The testing process will involve filling a segment of the pipeline with water and maintaining a prescribed pressure for a specified amount of time.

The length of individual test segments will be determined by topography and water availability. Water withdrawals used to fill and test the pipeline will be consistent with state regulations and MPL's Wetland and Waterbody Construction and Mitigation Procedures (WWCMP). MPL will obtain hydrostatic test water from major waterbodies crossed by the pipeline and/or municipal sources along the route. The test water will be discharged through energy dissipation devices to the ground surface or to a nearby waterbody. These discharges will be done in accordance with MPL's WWCMP and permits issued by the state agencies.

### **Cleanup**

After the backfilling is completed, MPL will regrade and restore work areas as nearly as practicable to the original contour of the land. Topsoil will be respread over areas from which it was originally removed. Permanent soil stabilization efforts will primarily include revegetation of the right-of-way. Fences that are removed to install the pipeline will be reconstructed across the right-of-way.

Disposal of timber, slash, and rock will be in accordance with the desires of the landowner and consistent with local regulations and MPL's Erosion Control Plan. In the absence of other agency regulations or the preferences of private landowners, merchantable timber will be stockpiled along the edge of the right-of-way. Slash will be stockpiled on the edge of the right-of-way, chipped and spread across the right-of-way in upland areas, hauled offsite, or burned onsite in accordance with local regulations. Excess rock will be stockpiled onsite if requested by the landowner, or disposed of in an alternative, landowner-approved upland area or permitted landfill.

**Restoration and Revegetation**

Following installation and final cleanup of the pipeline, original grade and contours will be restored to the extent practicable and permanent erosion controls will be installed. Disturbed areas will be revegetated in accordance with MPL's Revegetation Plan, other permit requirements, and site-specific landowner requests.

**Location**  
**(MR 4415.0140)**

**4415.0140      LOCATION OF PREFERRED ROUTE AND DESCRIPTION OF ENVIRONMENT**

**Subpart 1. Preferred route location. The applicant must identify the preferred route for the proposed pipeline and associated facilities, on any of the following documents which must be submitted with the application:**

- A. United States Geological Survey topographical maps to the scale of 1:24,000, if available;**
- B. Minnesota Department of Transportation county highway maps; or**
- C. aerial photos or other appropriate maps of equal or greater detail in items A and B. The maps or photos may be reduced for inclusion in the application. One full-sized set shall be provided to the board.**

County highway maps showing the location of the proposed route of the MinnCan Project in each of the 13 counties crossed are provided on Figures 2 through 14.

**Subpart 2. Other route locations.**

**All other route alternatives considered by the applicant must be identified on a separate map or aerial photos or set of maps and photos or identified in correspondence or other documents evidencing consideration of the route by the applicant.**

Figures 15 and 16 show the greenfield and major route alternatives, respectively, that were analyzed for the MinnCan Project. Section 2 of the Environmental Assessment Supplement provides a detailed analysis of these alternatives and Section 4415.0170 of this application provides a summary of this analysis.

**Subpart 3. Description of environment.**

**The applicant must provide a description of the existing environment along the preferred route.**

MPL has prepared an Environmental Assessment Supplement for the MinnCan Project that provides a description of the existing environment along the proposed route, an analysis of potential human and environmental impacts, and a discussion of measures that will be taken to protect and restore the right-of-way and to mitigate adverse impacts. A summary of the existing environmental conditions along the pipeline route is provided below. A summary of potential environmental impacts and mitigative measures is provided in Section 4415.0145 of this application. More detailed information on the existing environment along the proposed route is provided in the Environmental Assessment Supplement.

### **Socioeconomics**

County population levels in 2004 along the proposed route ranged from a low of 8,437 persons in Clearwater County to a high of 379,058 persons in Dakota County; population levels and densities generally are lowest in the northern counties and highest in the southern counties nearest the Twin Cities metropolitan area. Similarly, civilian workforce is lowest in northern counties and highest in southern counties; workforce levels in November 2005 ranged from a low of 3,888 persons in Clearwater County to a high of 231,464 persons in Dakota County. Employment in the project region is concentrated in the manufacturing, education, health, social services, and retail trade industries; however, agriculture is an important industry along the pipeline route. Per capita income in 2003 ranged from a low of \$20,810 in Todd County to a high of \$40,807 in Carver County. The pipeline route generally avoids populated centers and residential areas, crossing portions of only four communities (Staples, Eden Valley, Coates, and Rosemount).

### **Land Use**

Using the U.S. Geological Survey (USGS) Land Use and Land Cover Classification System and recent aerial photography (2005), MPL identified land use along the pipeline route and classified it into the following five categories based on prevalent land use and vegetation cover types: open lands, forest lands, agricultural lands, developed lands, and wetlands/open water. Agricultural lands are the predominant land use along the pipeline route (approximately 211 miles or 72 percent of the route), followed by forest lands (46 miles or 16 percent), wetlands/open water (34 miles or 12 percent), open lands (2 miles or less than 1 percent), and developed lands (1 miles or less than 1 percent). Of the agricultural land crossed approximately 61 percent is cultivated and the remaining 39 percent is pasture lands.

The pipeline route predominantly crosses private land located outside of incorporated areas (274.2 miles, or approximately 93 percent of the route). The route also crosses federal (1.0 mile), state (3.2 miles), and county (11.1 miles) lands, and incorporated areas (5.1 miles).

Approximately 112 miles of the route parallels MPL's existing pipelines, and an additional 13.7 miles parallels existing road and power line rights-of-way.

### **Terrain and Geology**

The proposed route is located in the Western Lake section of the Central Lowlands physiographic province. Surface features in this section were formed mainly during the Wisconsin Glaciation and include till plains, glacial moraines, outwash plains, and glaciolacustrine deposits. Bedrock in the project region consists of metamorphic, igneous, and sedimentary rocks overlain by thick layers of glacial deposits. Only 0.1 mile of the pipeline route crosses areas with bedrock at depths of less than 5 feet below grade. There is a low probability of an earthquake of significant intensity or other seismic event in the project area,

and no Quaternary-age fault is crossed by the project route. The route crosses within 0.25 mile of 16 sand and gravel quarries; however, none will be affected directly by pipeline construction.

### **Soils**

The proposed route crosses soils that formed from a variety of parent materials, including sandy, silty, and loamy glacial tills and moraines, lacustrine sands, and sandy outwash. These soils generally are resistant to water and wind erosion; only 19 percent of soils along the pipeline route are susceptible to water erosion, and 24 percent are susceptible to wind erosion. Approximately 48 percent of the soils are considered prime farmland. A portion of these soils, however, are considered prime farmland only if a limiting factor is mitigated (e.g., through artificial drainage). Based on soil moisture and texture, approximately 19 percent of the proposed route is underlain by soils prone to compaction and rutting. An additional 11 percent of the route contains soils with an organic surface horizon which also may be susceptible to rutting. Approximately 46 percent of the proposed route crosses stony or rocky soils. Less than 0.1 percent of the pipeline route crosses droughty soils or soils that contain bedrock within 5 feet of the surface.

### **Vegetation, Wildlife, and Fisheries**

As discussed above, a majority of the pipeline route (approximately 72 percent) crosses agricultural lands, followed by forest lands (16 percent), wetlands (approximately 12 percent), and open land (approximately 1 percent). The primary crops grown in the agricultural areas are corn and soybeans, with smaller acreages of small grains, hay, and specialty crops. Typical forested communities along the pipeline route are mixed hardwood forests, aspen-birch forests, and pine forests. The majority of forested areas occur within the northern counties where the proposed pipeline will parallel MPL's existing pipelines. Wetland types crossed by the pipeline route include emergent, scrub-shrub, and forested types. Open areas crossed include uplands or existing rights-of way dominated by grasses and shrubs.

The proposed pipeline will be constructed through multiple biomes, including the deciduous and conifer-hardwood forest zones and the prairie zone. Wildlife habitats within these areas are diverse and include open areas, wetlands, and forested areas. Because the pipeline route predominantly crosses agricultural lands within these zones, wildlife habitat is limited along the route and generally confined to undeveloped areas. Some of the more common mammalian species located within the project area include white-tailed deer, eastern cottontail rabbit, woodchucks, raccoons, skunks, gray and fox squirrels, gray and red fox, and several species of bats. Wetlands crossed by the pipeline route may contain muskrat, beaver, mink, waterfowl, and numerous species of reptiles and amphibians. The project area also supports a large number of avian species, including songbirds, hawks, wading birds, and owls.

The pipeline route crosses 64 perennial streams and 119 intermittent streams.

Most of these waterbodies contain warm water fisheries; however, the project also will cross six coldwater fisheries designated as trout waters. Game fish that may occur in the major river and stream crossings in the project area include northern pike, muskellunge, walleye, sauger, yellow perch, largemouth and small mouth bass, crappie, bluegill, channel catfish, and sunfish. Coldwater fisheries crossed by the pipeline route may contain brook and brown trout.

During the planning and routing stages of the project, MPL used information provided in the Minnesota Natural Heritage Inventory database to select a route that avoids threatened and endangered species and other sensitive resources to the extent practicable. Based on sensitive resources data provided in this database, the proposed route is located within about one-half mile of known occurrences of one federally listed species (bald eagle), three state-listed plant species (Bog Bluegrass, Sterile Sedge, and Kitten-tails), and one state-listed reptile (Blandings Turtle).

### **Water Resources – Groundwater**

Groundwater along the proposed route occurs in surficial aquifers, buried drift aquifers, and bedrock aquifers. Surficial aquifers occur above bedrock in unconsolidated sediments deposited by glaciers, streams, and lakes. Buried drift aquifers occur in well sorted sands and gravels deposited in bedrock valleys, alluvial channels, and outwash plains. Bedrock aquifers occur in sedimentary rock formations. Surficial and buried drift aquifers are more common in the northern counties crossed by the pipeline route; bedrock aquifers are more common in the southern counties. Of the three types, surficial aquifers are most susceptible to impacts from construction because of the relatively shallow depth of the water table and coarse texture of the material overlying the aquifer. Bedrock aquifers are also susceptible to contamination from releases where the bedrock is at or near the ground surface.

MPL identified 15 domestic water supply wells within 200 feet of the pipeline route. No public water supply wells are located within 500 feet of the pipeline route. Near Park Rapids, the proposed route crosses about 600 feet of a Drinking Water Supply Management Area, and it passes within approximately 800 feet of a Wellhead Protection Area. The pipeline route does not cross any designated sole-source aquifers.

MPL accessed a Minnesota Pollution Control Agency database to identify sites with known or potential groundwater contamination in the vicinity of the proposed route. MPL routed the pipeline to avoid a dump site formerly operated by the City of Farmington. Two other sites were identified at the end of the proposed route on land owned by Flint Hills Resources refinery. MPL will work with the refinery personnel to avoid or mitigate impacts associated with construction in the vicinity of these sites.

### **Water Resources – Surface Water**

The proposed route crosses portions of four major drainage basins: the Red

River of the North Basin, Upper Mississippi River Basin, Minnesota River Basin, and Lower Mississippi River Basin. Within these major drainage basins, the route crosses 14 major watersheds. Six of these (Red Lake, Wild Rice, South Two Rivers, North Fork of the Crow River, Sauk River, and Buffalo Creek) have established watershed districts and one has a designated Joint Powers Organization (Vermillion River watershed).

The proposed route crosses 183 waterbodies, consisting of 64 perennial streams and 119 intermittent streams. Sixty six waterbodies are designated as Protected Waters by the Minnesota Department of Natural Resources (MDNR). Five waterbodies are greater than 100 feet wide at the pipeline crossing, including Hay Creek, Straight River, Long Prairie River, North Fork of the Crow River, and Minnesota River.

Two waterbodies (Mississippi River and North Fork of the Crow River) are designated as Outstanding Resource Value Waters and as state canoe/boating routes. Additionally, the Mississippi River is classified as a Wild River by the Mississippi Headwaters Board, and the North Fork of the Crow River is designated as a Minnesota Wild and Scenic River for its recreational uses. Two additional rivers are classified as either state or county canoe routes (Minnesota River and Sauk River).

MPL identified approximately 32.6 miles of National Wetlands Inventory (NWI)-mapped wetlands along the pipeline route. Emergent wetlands (PEM) are the predominant wetland type, accounting for about 21 miles (or 64 percent) of the wetlands along the pipeline route. Other wetland types along the route include scrub-shrub wetlands (PSS; 7.5 miles or 23 percent), forested and/or partially forested wetlands (PFO, PEM/PFO, and PSS/PFO; 4 miles or 12 percent), and unconsolidated bottom wetlands (PUB; 0.1 mile or 0.4 percent).

The pipeline route crosses 38 wetlands and/or wetland complexes where the total crossing length is greater than 1,000 feet. These 38 wetland crossings account for approximately 13.3 miles of the wetlands (41 percent) along the pipeline route. Most of these larger wetlands are emergent wetlands that are flooded temporarily or seasonally; however, nine of these wetlands are classified as forested or partially forested. The proposed pipeline crosses seven of the forested or partially forested wetlands along the northern portion of the route where the proposed pipeline will parallel MPL's existing pipelines.

The pipeline route crosses eight wetlands listed on the MDNR's Protected Waters Inventory, which are regulated as public waters by the MDNR.

### **Cultural Resources**

MPL reviewed existing site file data maintained by the Minnesota Historical Society to identify previously recorded cultural resource sites within the proposed construction right-of-way. This review identified two archaeological sites and one historic built property. One of the archaeological sites, a historic ghost town (21CRo), and the built property, a historic school house (DK-RSC-008), are known only from historical accounts and map sources; the locations and boundaries of these sites have not been verified by field survey. The other site (21HB61) consists of the remains of a historic school; its location was confirmed by a previous archaeological survey. None of the three resources have been assessed for listing in the National Register of Historic Places (NRHP).

### **Federal, State, and County Recreational Areas**

The pipeline route crosses several designated recreational areas, including 1 mile of National Waterfowl Production Areas, 3.2 miles of state lands (including the Villard Wildlife Management Area), and two state-designated trails (Glacial Lakes and Luce Line State Trails). The pipeline route crosses 11.1 miles of county managed forest lands in five counties and one county-designated trail. The route also crosses four state or county designated canoe and boating routes (Mississippi, North Fork of the Crow, Sauk, and Minnesota Rivers), and three designated scenic byways (Great River Road, Lake Country Scenic Byway, and Minnesota River Valley Scenic Byway).

**Environmental Impact  
(MR 4415.0145)**

**4415.0145      ENVIRONMENTAL IMPACT OF PREFERRED ROUTE**

**The applicant must also submit to the board [PUC] along with the application an analysis of the potential human and environmental impacts that may be expected from pipeline right-of-way preparation and construction practices and operation and maintenance procedures. These impacts include but are not limited to the impacts for which criteria are specified in part 4415.0040 or 4415.0100.**

MPL prepared an Environmental Assessment Supplement for the MinnCan Project that provides a description of the existing environment along the proposed route, an analysis of potential human and environmental impacts, and a discussion of measures that will be taken to protect and restore the right-of-way and to mitigate adverse impacts. A summary of the potential human and environmental impacts is presented below. A summary of the existing environment along the proposed route is provided in Section 4415.140 of this application. More detailed information on the human environmental impacts and mitigative measures is provided in the Environmental Assessment Supplement.

**Socioeconomics**

During pipeline construction, MPL will employ approximately 1,000 local and non-local workers. These workers generally will be dispersed along the length of the construction corridor rather than concentrated at a single work site. As a result, there will not be a significant increase in the population of any county along the pipeline route. Non-local workers will reside in the vicinity of the project for short periods, and they typically will not be accompanied by family members. Demand for housing and public services from the non-local workers will be incremental and small.

Construction of the pipeline may temporarily affect transportation systems along the pipeline route. MPL typically will construct the pipeline across paved roadways and railroads using road-boring equipment to avoid disruptions to vehicular or railcar movement and physical impacts on road/railroad beds. Unpaved roadways will be crossed by boring or by using the open-cut method. The latter method could temporarily disrupt road traffic as the pipe trench is excavated across the roadway. To minimize traffic delays at these crossings, MPL will establish traffic detours or maintain at least one traffic lane except for brief periods when road closure is essential to lay the pipeline.

Movement of workers, equipment, and materials from contractor and pipe storage yards to the work sites also could result in short-term impacts on the transportation systems. MPL anticipates that road congestion associated with construction will increase during peak hours, but congestion is not expected to be significant.

Construction and operation of the project will benefit local economies through expenditures for wages, purchase of materials, and annual taxes. Construction will create temporary jobs for both local and non-local workers, and operation of the pipeline will create four new permanent jobs to be based locally at existing

MPL facilities in Clearbrook, Little Falls, or Rosemount. A portion of construction workers' or permanent employee's earnings will be spent locally, which will benefit hospitality and housing services.

**Land Use**

In general, the proposed pipeline will be constructed within a 100-foot-wide right-of-way. Temporary extra workspaces will be needed where the route crosses roads, waterbodies, etc. In total, construction of the project will temporarily affect approximately 4,000 acres of land. Where the pipeline route parallels MPL's existing pipelines, an additional 35-foot-wide strip adjacent to the existing right-of-way corridor will be maintained permanently in an herbaceous state to facilitate inspection of the pipeline. Where the pipeline will be built in a new corridor, MPL will retain a 50-foot-wide permanent easement, which will be maintained during pipeline operations. Maintenance of the 35-foot-wide strip adjacent to the existing corridor and 50-foot-wide permanent easement will affect approximately 1,581 acres of land.

MPL classified land use along the pipeline route into the following five categories: agricultural lands, forest lands, wetlands/open water, open lands, and developed lands. The following table provides a summary of land use categories affected by pipeline construction and operation.

<b>Land Use Categories Affected by Construction and Operation of the Proposed Pipeline</b>				
	Land Area Affected By Construction		Land Area Affected by Operation	
	Acres	Percent	Acres	Percent
Agricultural lands	2,868	71.7%	1,168	74.0%
Forest Lands	507.8	12.7%	215.7	13.6%
Wetlands/Open Water	468.6	11.7%	182.1	11.5%
Open Lands	143.5	3.6%	9.5	0.6%
Developed Lands	12.0	0.3%	5.0	0.3%
<b>Total</b>	<b>4,000</b>	<b>100%</b>	<b>1,581</b>	<b>100%</b>

Pipeline construction temporarily will disturb about 2,868 acres of agricultural lands, or approximately 72 percent of the total land affected. Of the agricultural land affected, approximately 61 percent is cultivated and 39 percent is pasture lands. Construction activities also may interfere with planting or harvesting, depending on the timing of construction. Impacts on agricultural areas will be minimized by implementation of MPL's Agricultural Impact Mitigation Plan (Appendix C to the Environmental Assessment Supplement). Following construction and restoration, agricultural activities will be allowed to resume along the permanent right-of-way. An additional 1 to 2 acres of agricultural land will be permanently affected by construction and operation of the mid-point pump station in Morrison County.

Approximately 508 acres of forest lands will be disturbed by pipeline construction. To facilitate installation of the pipeline, trees and brush will be removed from the construction right-of-way and temporary extra workspaces. Following construction, the right-of-way will be restored and revegetated. Consistent with standard industry practices, the new permanent right-of-way in forest lands will be maintained in a herbaceous state to facilitate aerial inspection of the pipeline; however, the remainder of the construction right-of-way and the temporary extra workspaces will be allowed to revert to their natural forested state.

Approximately 469 acres of wetlands and open water will be affected by pipeline construction. These wetlands are distributed along the entire length of the proposed pipeline route. Impacts on these wetlands will be minimized by implementation of the procedures specified in MPL's Wetland and Waterbody Construction and Mitigation Procedures (Appendix D to the Environmental Assessment Supplement).

Approximately 144 acres of open land will be disturbed by pipeline construction. Open lands include non-forested undeveloped uplands and utility rights-of-way, including MPL's existing pipelines. Open lands will be temporarily disturbed during grading, trenching, backfilling, and restoration. Once construction is complete, open land will be restored and revegetated.

Approximately 12 acres of developed land will be temporarily disturbed by pipeline construction. Both short-term and long-term impacts on residential and commercial areas may result from construction and operation of the pipeline. These include temporary disturbances associated with construction, and encumbrance of property for future uses within the permanent right-of-way. Temporary construction impacts on residences and buildings could result from increased noise levels or dust generated by construction equipment and personnel, and by trenching across roads or driveways. New structures, such as pools, garages or sheds, will be precluded from the new permanent right-of-way during operations of the pipeline.

### **Terrain and Geology**

Construction and operation of the proposed pipeline will result in minor impacts on topography and geology. MPL will minimize impacts by restoring contours to pre-construction conditions to the extent practicable and by implementing the erosion control measures described in its Upland Erosion Control, Revegetation, and Maintenance Plan (Appendix B to the Environmental Assessment Supplement). Less than 0.1 percent of the pipeline route crosses areas with shallow bedrock; this bedrock is relatively soft and likely will not require blasting during excavation of the pipe trench. There is a minimal risk of impacts associated with seismic activity in the project area. Sixteen sand and gravel quarries are located within 0.25 mile of the proposed route. None of the quarries will be affected directly by pipeline construction; however, the new pipeline could constrain future expansion of these operations in the vicinity of the right-of-way.

### **Soils**

Pipeline construction activities such as clearing, grading, trench excavation, and backfilling, as well as movement of construction equipment along the right-of-way, will affect soil resources. MPL will minimize these impacts by implementing the mitigation measures described in its Upland Erosion Control, Revegetation, and Maintenance Plan and Agricultural Impact Mitigation Plan. These measures will include topsoil segregation, compaction alleviation, removal of excess rock, restoration of agricultural drainage systems, and the installation of temporary and permanent erosion control structures. MPL also will revegetate disturbed areas except active cropland following final grading.

### **Vegetation, Wildlife, and Fisheries**

During construction, existing vegetation will be removed from within the construction right-of-way and temporary workspace areas to facilitate the installation of the pipeline. The impact of clearing and the time required to achieve recovery of vegetation communities will depend on the size and age of the pre-existing vegetation. In general, impacts will be greatest in forest lands because forest vegetation is more structurally complex than other vegetation types and takes longer to become re-established.

Impacts on vegetation along the pipeline route will be minimized by confining clearing activities to the 100-foot-wide construction right-of-way and temporary extra workspaces and by implementing the erosion control measures described in MPL's Upland Erosion Control, Revegetation, and Maintenance Plan. Where the pipeline route parallels the existing pipeline corridor, construction areas will overlap the existing maintained right-of-way, thereby reducing the amount of forest and shrub lands that will be cleared prior to construction.

Operation and maintenance of the proposed pipeline facilities will have additional effects on vegetation after site clearing and right-of-way restoration are complete.

To facilitate inspection of the pipeline, the permanent right-of-way periodically will be cleared of trees and shrubs to facilitate aerial inspection of the pipeline and maintain visibility of pipeline markers located at property lines and crossings

of roads and waterbodies. Areas used temporarily for construction will be allowed to revert to their previous state.

Construction and operation of the pipeline is not anticipated to have a significant impact on wildlife. Temporary impacts will occur during construction due to clearing of vegetation and disturbance of soils in the right-of-way. Most wildlife will disperse from the project area as construction activities approach. Displaced species may recolonize in adjacent, undisturbed areas, or re-establish in their previously occupied habitats after construction is complete and suitable habitat is re-established. Long-term impacts on wildlife could result from a loss of forest habitat due to clearing the temporary construction right-of-way and temporary extra workspaces. Long-term effects on wildlife species will be limited because the pipeline predominantly will be constructed adjacent to an existing pipeline corridor or constructed in agricultural areas. Overall, construction and operation of the project will not significantly alter the character of the landscape along the pipeline route.

Pipeline construction will result in temporary impacts on streams and rivers. Some potential impacts on fisheries resources, such as sedimentation and turbidity, removal of streambank cover, introduction of water pollutants, or entrainment and impingement of aquatic organisms could result from construction activities. Overall, impacts from construction on fish and other aquatic organisms are expected to be localized and temporary. To minimize the potential for adverse impacts on fisheries at river and stream crossings, MPL will implement erosion and sediment control measures and limit the duration of construction across waterbodies as specified in MPL's Wetland and Waterbody Construction and Mitigation Procedures.

MPL has consulted with the Minnesota Department of Natural Resources (MDNR) and will consult with the U.S. Fish and Wildlife Service (USFWS) regarding threatened and endangered species and their potential presence within the project area. Based on information from the MDNR Natural Heritage Inventory database, there are known occurrences of one federally listed species and four state-listed species located within about one-half mile of the proposed route. If protected species are identified as potentially occurring within the construction right-of-way and/or may be directly affected by the project, MPL will develop mitigation plans to avoid and minimize impacts on the potentially affected species. MPL also will consult with the MDNR and USFWS to determine the location of bald eagle nesting sites. If these sites are located in close proximity to construction areas, MPL will develop mitigation plans to avoid adverse effects on the bald eagles. Possible mitigation may include conducting surveys before construction to determine if previously identified bald eagle nests are active and/or avoiding construction in the immediate vicinity of active nests during the nesting season.

#### **Water Resources – Groundwater**

MPL will prepare and implement a Stormwater Pollution Prevention Plan (SWPPP), which will include measures for preventing, containing, and cleaning up accidental releases of fuels and other hazardous substances during

construction of the pipeline.

As part of pipeline operations, Koch Pipeline Company (operators of the MPL system) will implement an ongoing inspection program to protect the integrity of the pipeline system and to prevent the accidental release of crude oil. Activities will include regular aerial and ground patrols; active participation in Gopher State One Call; external and internal corrosion prevention; in-line inspection; and regular evaluation of practices and procedures.

### **Surface Water Resources**

Pipeline construction across rivers and streams may result in temporary and long-term adverse environmental impacts if not properly mitigated. MPL's proposed waterbody construction methods, specifically with respect to construction time windows, erosion control, bank stabilization, and bank revegetation, will minimize short- and long-term impacts to the waterbodies along the pipeline route. Temporary impacts from in-stream trenching could include an increase in the sediment load downstream of the crossing location. MPL will avoid and minimize impacts to waterbodies by implementing the erosion and sediment control measures described in its Wetland and Waterbody Construction and Mitigation Procedures. MPL also will limit the duration of construction within waterbodies and limit equipment operation within waterbodies to the area necessary to complete the crossing. Disturbed areas at crossings will be restored and stabilized as soon as practicable after pipeline installation.

Alternative construction techniques (such as horizontal directional drill (HDD) or other dry crossing methods) may be used at selected waterbody crossings to avoid or minimize impacts to these waterbodies. The HDD method is a well established construction technique that avoids impacts associated with conventional open-cut methods by installing pipelines beneath large waterbodies. HDD installations have the potential to affect waterbodies, however, through inadvertent releases of drilling mud during construction. If HDD is used to cross waterbodies, MPL will develop and implement an HDD Mitigation Plan that outlines the procedures to be followed in the event of an inadvertent release of drilling mud.

Spills from refueling operations, fuel storage, or equipment failure in or near a waterbody could affect aquatic resources and contaminate the waterbody downstream of the release point. To mitigate these effects, MPL will implement the appropriate provisions in its Wetland and Waterbody Construction and Mitigation Procedures and implement its SWPPP.

No wetlands will be drained or filled permanently during pipeline construction; however, construction will result in minor, short-term impacts to wetlands. These impacts include temporary loss of wetland vegetation, aesthetics, and wildlife habitat due to clearing and other construction activities; soil disturbance due to trenching, equipment traffic, and removal of vegetation and tree stumps; and temporary increases in turbidity and fluctuations in wetland hydrology due to trenching and spoil storage.

MPL will identify and field delineate wetlands along the pipeline route. Impacts on these identified wetlands will be minimized by implementing the measures described in MPL's Wetland and Waterbody Construction and Mitigation Procedures. In general, MPL will restore wetlands to preconstruction conditions. Impacts on forested and scrub-shrub wetlands will be of longer duration than other wetland types because the woody vegetation in these wetlands will require a longer time to re-establish in the construction corridor.

After construction, MPL periodically will remove woody vegetation from forested and scrub-shrub wetlands within the permanently maintained right-of-way to facilitate aerial and ground inspections of the pipeline corridor. These maintenance activities will result in the permanent conversion of about 18 acres of forested wetland and about 41 acres of scrub-shrub wetland to predominantly emergent wetland within the maintained right-of-way.

### **Cultural Resources**

MPL consulted with the St. Paul District of the U.S. Army Corps of Engineers (COE) and the Minnesota State Historic Preservation Office (SHPO) to assess the potential of the proposed pipeline to affect significant cultural resources. In conjunction with these agencies, MPL will develop a sensitivity model that stratifies the route into areas with high, moderate, and low probabilities for containing cultural resource sites. MPL will implement a protocol for field surveys that targets the high and moderate sensitivity areas along the route. Sites identified during the survey will be evaluated for listing on the National Register of Historic Places (NRHP). MPL will prepare a report of field investigations for review by the COE and SHPO.

If any NRHP-eligible sites are identified, MPL will work with the COE and SHPO to develop measures for avoiding, minimizing, or mitigating adverse effects to these sites. These measures may include pipeline reroutes, construction beneath sites using conventional bore or HDD technology; fencing of sites; construction monitoring by an archaeologist; or archaeological data recovery. In addition, MPL will develop a plan for responding to unexpected finds of cultural resource sites or human remains during construction. This plan will identify measures for documenting and evaluating sites, consulting with the COE and SHPO to evaluate the NRHP eligibility of sites, and implementing measures to avoid, minimize, or mitigate adverse effects to eligible sites.

### **Federal, State, and County Recreational Areas**

Construction and operation of the proposed pipeline are not expected to have significant impacts on recreational lands crossed by the proposed pipeline. The first 119 miles of the pipeline route generally will be constructed adjacent to MPL's existing pipelines, which will minimize impacts on public and recreational lands in these areas. Impacts on recreational use of public lands primarily will be limited to temporary inconveniences and localized disturbances, including noise, dust, and visual intrusions associated with construction activities. No long-term impacts to recreational activities within public lands will result from pipeline construction and operation. Vegetation maintenance of the permanent right-of-

way, however, could have limited visual impacts on public lands that are forested.

Construction temporarily will restrict public use of recreational areas along the pipeline route. These impacts will be dependent on the timing of construction, the season in which the recreational activity occurs, and the construction methods used. Public access to federal, state, and county lands will be maintained to the extent possible during construction. Short-term closures of some areas may be necessary during construction. After construction is completed, the public lands will be restored to allow previous uses and recreational activities to continue. MPL will consult with the USFWS, MDNR, and county land management agencies to avoid and minimize impacts on recreational areas.

Boating and recreational use of the rivers, including state- and county-designated canoe routes, may be affected during pipeline construction of the pipeline. Depending on the crossing method used, impacts on river users may include construction noise, downstream turbidity, or temporary obstructions such as sediment curtains or construction equipment at the crossing location. MPL will coordinate with the MDNR and local governments to minimize recreational impacts at the river crossings.

**ROW Protection  
(MR 4415.0150)**

**4415.0150     RIGHT-OF-WAY PROTECTION AND RESTORATION MEASURES**

MPL has developed standardized erosion control and restoration measures to minimize and mitigate potentially adverse environmental effects resulting from right-of-way preparation, construction, operation, and maintenance of the proposed pipeline. These measures are described in MPL's Upland Erosion Control, Revegetation, and Maintenance Plan (Erosion Control Plan) and Wetland and Waterbody Construction and Mitigation Procedures (WWCMP) and the Agricultural Impact Mitigation Plan (AIMP). MPL will also develop and implement a Stormwater Pollution Prevention Plan (SWPPP), which will contain spill prevention and response procedures that meet state and federal requirements. The Erosion Control Plan, WWCMP, AIMP, and SWPPP are comprehensive, controlling documents that will be included in contract specifications.

MPL will comply with applicable federal, state, and local rules and regulations and take appropriate precautions to protect against degradation of the environment. MPL will retain third-party Environmental Inspectors to verify that environmental protection measures, environmental permit conditions, and other environmental specifications are implemented appropriately by the contractor during construction of the proposed facilities. Environmental Inspectors will have peer status with all other construction inspectors and will have the authority to stop construction activities, as necessary. On each construction spread, one of the Environmental Inspectors will be designated as the Agricultural Inspector. The Agricultural Inspector will be experienced in mitigating the effects of pipeline construction on agricultural land and will be responsible for enforcing the provisions of the AIMP.

To add another level of protection, MPL will fund up to two state agency monitors per construction spread. One will be designated as the Agricultural Monitor, as defined in the AIMP, and will report to the Minnesota Department of Agriculture. The Agricultural Monitor will be experienced in mitigating the effects of pipeline construction on agricultural land and will be responsible for monitoring MPL's compliance with the provisions of the AIMP. The other agency monitor will report to the Minnesota Department of Natural Resources (MDNR). The MDNR Monitor will generally monitor MPL's compliance with requirements of MDNR permits, although the qualifications, roles and responsibilities will be subject to negotiations with MDNR.

MPL will negotiate easements with affected landowners along the proposed route, including federal, state, and local land managing agencies. These easements may specify site-specific protection and restoration measures. In addition, easement negotiations will address compensation for loss of crops and for damages to landowner's property.

### Subpart 1. Protection.

**The application must describe what measures will be taken to protect the right-of-way or mitigate the adverse impacts of right-of-way preparation, pipeline construction, and operation and maintenance on the human and natural environment.**

Measures that will be taken to protect the right-of-way or mitigate the adverse impacts of right-of-way preparation, pipeline construction, and operation and maintenance on the human and natural environment are described in detail in the Erosion Control Plan, WWCMP, and AIMP attached to the Environmental Assessment Supplement. A summary of the primary protective measures to be implemented during construction of the MinnCan Project is provided below:

- Topsoil in active cropland will be removed from either the trench and spoil storage areas or the trench area, as specified in the AIMP, and replaced after the trench is backfilled;
- Topsoil in pasture land will be removed from the trench area and replaced after the trench is backfilled;
- Drain tiles encountered during trenching activities will be marked and identified for repair following pipeline installation;
- Temporary erosion control measures will be installed and maintained to minimize erosion and sediment from leaving the construction right-of-way;
- Trench dewatering discharges will be directed to vegetated upland areas to prevent sediment from entering waterbodies and wetlands to the extent practicable;
- Temporary bridges will be used, where necessary, to transport construction equipment across perennial streams and rivers;
- Construction across flowing streams and rivers will be conducted as quickly as possible;
- Hazardous materials, chemicals, fuels, and lubricating oils will not be stored near waterbodies, wetlands, or water supply wells;
- Construction mats, or low ground pressure equipment will be used in wetlands, to minimize disturbance of the wetlands;
- Major highways and most paved secondary roads will be crossed using boring equipment to minimize disruption of traffic and to avoid disturbance of the road surface;
- Open-cut crossings of roads will be completed in accordance with permit requirements of each county crossed; and
- Near residences, mitigation measures will be implemented to minimize construction-related dust.

**Subpart 2. Restoration.**

**The applicant must describe what measures will be taken to restore the right-of-way and other areas adversely affected by construction of the pipeline.**

Measures that will be taken to restore the right-of-way and other areas adversely affected by construction of the pipeline are described in detail in the Erosion Control Plan, WWCMP, and AIMP and are included in the Environmental Assessment Supplement. A summary of the primary restoration measures to be used during restoration of project areas are provided below:

The Erosion Control Plan specifies:

- Permanent erosion control measures to be implemented in upland areas disturbed by the project;
- Permanent seeding on non-cultivated areas disturbed by the project;
- Inspection and performance standards for areas revegetated by MPL; and
- Vegetation maintenance practices to be conducted by Koch Pipeline Company (operators of the MPL pipeline system) within the permanent right-of-way.

The WWCMP specifies:

- Bank stabilization practices to be used at each waterbody crossed by the project;
- Permanent erosion controls to be established at waterbody crossings;
- Vegetation maintenance practices to be implemented at waterbody crossings within the permanent right-of-way; and
- Restoration and revegetation measures to be implemented in wetlands.

The AIMP specifies:

- Procedures for the repair of drain tiles encountered during trenching;
- Procedures for topsoil replacement;
- Performance standards for the removal of excess rock;
- Methods to be used to reduce soil compaction; and
- Procedures for the restoration of fences and gates removed during construction.

**Operation & Maintenance  
(MR 4415.0160)**

**4415.0160    OPERATION 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.**

As operators of the existing and proposed MPL pipeline systems, Koch Pipeline Company (KPL) is committed to designing, constructing, operating, and maintaining the pipeline system in a manner that protects the environment and provides for the safety of the public, contractors and employees. The proposed pipeline's design, construction, maintenance and operation functions are regulated by the Pipeline and Hazardous Materials Safety Administration (PHMSA) of the U.S. Department of Transportation, specifically in Title 49 CFR Part 195 - Transportation of Hazardous Liquids by Pipeline.

The federal agency charged with enforcement of Part 195 is the Office of Pipeline Safety (OPS) within PHMSA. In 1991, the Minnesota Office of Pipeline Safety (MnOPS) was designated as inspectors on behalf of the OPS. Findings, reports and recommendations from MnOPS inspectors are referred to the OPS for review and action.

KPL brings seven decades of pipeline industry experience to its customers and the communities it serves. In each of its communities, KPL strives for excellence in regulatory and legal compliance and in safety and environmental stewardship. To achieve this, KPL has developed a technologically advanced control center operations, communications capabilities, and leak prevention training, and public outreach programs.

**Pipeline Control Center**

KPL operates a Pipeline Control Center in Wichita, Kansas. The control center houses the remote operating capabilities for monitoring and controlling pipeline operations. The control center provides a 24-hours-per-day, 7-days-per-week operation with the vision of moving product safely, efficiently and timely to meet the business' needs. The control center's primary responsibilities include:

- Receive, transport, and deliver product by remotely operating the assets to meet the business's objectives while protecting the safety of the public and to protect the environment;
- Identify and respond to abnormal and emergency events to avoid or minimize the negative impacts to the public, the environment, our employees, and our customers;
- Monitor pipeline operating data, optimize power usage and respond to the leak detection system;
- Provide a communication "hub" that enables access to internal and external customers and respond to the toll-free "800" emergency calls; and

- Documentation of daily operations and conditions that occur on the systems.

Key components of the remote operating capability include the SCADA system, the leak detection capability and the communication network. KPL maintains a 24 hours-per-day, 7 days-per-week team to support the components of the remote operating capability. These components are summarized below:

SCADA – This system gathers operating data from the remote locations, displays the data on computer screens that allow pipeline controllers to monitor and control the pipeline operations. This system utilizes third party software customized for KPL operations. The system has multiple levels of redundancy for software and hardware systems.

Leak Detection Capability – The pipeline is monitored to ensure the integrity of the pipeline system. The leak detection system utilizes a real time hydraulic model to continuously monitor the system for the possibility of a potential release. This system also includes multiple layers of redundancy. In 1999, the Pipeline Leak Detection System and associated technology utilized by KPL received a *Computerworld* Smithsonian Award for Technology as one of the nation's top 50 innovative technology initiatives.

Communication Network – KPL owns and operates a primary earth station for satellite communication to transmit and receive operating data to and from the remote field locations. The communication network has two levels of redundancy. The primary backup system utilizes a redundant earth station located at the satellite service provider's location. A secondary level of communication backup includes existing WAN circuits, dialup phone service and/or frame relay services, located at key facilities.

### **Pipeline Integrity and Reliability Program**

Safety and environmental performance is KPL's first priority. KPL will achieve its goal of protecting the safety of employees, customers, contractors, and the public and protecting the environment by ensuring the mechanical integrity of its pipelines. The Pipeline Integrity and Reliability Program defines the processes and procedures KPL utilizes to achieve this goal and comply with applicable laws and regulations. The program ensures the integrity of the pipeline assets by addressing topics such as:

- Corrosion prevention,
- Integrity testing and inspection,
- Right-of-way monitoring and assessment,
- Excavation damage prevention, and
- Public and excavation contractor education.

KPL's Pipeline Integrity Management Plan was developed to meet the requirements of DOT's Pipeline Integrity Management in High Consequence Areas (HCA) rule (49 CFR Part 195.452). KPL has identified pipeline sections that could affect an HCA, and has made special considerations in these areas when developing and implementing leak prevention and spill mitigation programs.

The KPL integrity management programs include specific practices and procedures to continually assess and monitor, regularly test and inspect, and prevent corrosion and excavation damage on the operated pipelines. KPL regularly tests and inspects the condition of the pipelines and the effectiveness of day-to-day leak prevention activities, using timely data evaluation, investigation, and corrective action procedures.

The following practices and procedures are among many that KPL has developed to ensure safe and reliable pipeline operations:

- External corrosion prevention – An external coating is applied to the outer pipe surface to prevent corrosion at the time of construction. This coating, combined with the application of cathodic protection, minimizes the potential for corrosion. The cathodic protection system is monitored on regular frequency to ensure it is functioning properly.
- Internal corrosion prevention – Products transported in the pipeline are evaluated to determine the potential for causing internal corrosion. Corrosion inhibitor chemicals can be injected into the pipeline to prevent corrosion. Routine maintenance pigging is also used for internal cleaning to prevent corrosion.
- Integrity testing – KPL regularly performs internal in-line inspections of its pipelines to evaluate the condition of the pipeline and effectiveness of corrosion prevention activities. High resolution in-line inspection equipment (smart pig), capable of detecting corrosion and dents, is used to inspect the pipelines. Inspection data is evaluated and indications of corrosion or dents that could affect the integrity of the pipeline are investigated.
- Prevention of Damage by Excavation - This process includes procedures for receiving notifications of potential excavation activity near KPL's pipeline systems, field evaluation, line marking, and inspection of excavation activity near the pipeline. KPL actively supports and participates with Gopher State One Call and other organizations to provide excavation damage prevention education. KPL's Damage Prevention Manager has been honored by MnOPS for contributions in improving public awareness for the pipeline industry in the State of Minnesota.
- Right-of-way conditions are evaluated by routine aerial and walking patrols. Surveys are conducted to evaluate changing conditions on the pipeline right-of-way, which can include erosion, soil subsidence, and unauthorized excavation or construction activity.
- KPL regularly evaluates and assesses the implementation of its practices and procedures to ensure consistent application and identify improvement opportunities. KPL enlists its own auditors and subject matter experts, along with independent auditors to perform evaluations and audits. KPL pipeline systems are regularly inspected by state and federal agency inspectors.

### **Training**

KPL's training and qualification programs ensure employees have the knowledge needed to do their job safely and in a way that maintains the integrity of KPL's systems. Employees and contractors who perform work on the pipeline systems must attend training and meet specific qualification requirements. KPL has developed an Operator Qualification Program to meet the requirement of 49 CFR Part 195.501 to ensure that personnel performing prescribed tasks on the pipeline are qualified.

### **Public Outreach**

KPL has developed a Public Awareness Program to outline the process and practices used to provide pipeline safety and excavation damage prevention information to the public, contractors involved in excavation activities, government emergency response agencies and local officials. In 2004, KPL mailed pipeline safety brochures to the public living within the vicinity of the pipeline, companies engaged in excavation activities, and emergency response agencies. The safety brochures will be mailed again in 2006. KPL conducts regular discussions with contractors to help prevent excavation damage to its pipelines and with emergency response agencies to ensure effective response to an incident involving a KPL pipeline.

### **Right-of-Way Maintenance**

Routine right-of-way maintenance and vegetation clearing are conducted as needed along the pipeline corridor to facilitate inspection of the right-of-way. In general, a 50-foot-wide corridor centered over the pipeline will be cleared of brush and trees. Where the newly constructed pipeline parallels the existing MPL system, up to a 100-foot-wide corridor centered over the pipelines will be cleared of brush and trees.

**Government Agencies & Permits  
(MR 4415.0165)**

**4415.0165    LIST OF GOVERNMENT AGENCIES AND PERMITS**

**Each application must contain a list of all the known federal, state, and local agencies or authorities and titles of the permits they issue that are required for the proposed pipeline and associated facilities.**

See attached table 4415.0165

**TABLE 4415.0165  
 LIST OF GOVERNMENT AGENCIES AND PERMITS**

Name of Agency	Permit/Activity	Application Submittal Date	Anticipated Agency Approval Date	Status
<b>Federal</b>				
U.S. Army Corps of Engineers	Sections 10 and 404 Permits	May 2006	January 2007	To be filed
U.S. Fish and Wildlife Service	Section 7 Consultation	January 2006	January 2007	Ongoing
<b>State of Minnesota</b>				
Public Utilities Commission	Certificate of Need	January 2006	October 2006	Submitted
	Routing Permit	January 2006	October 2006	Submitted
Department of Natural Resources	License to Cross Public Waters	September 2006	January 2007	To be filed
	License to Cross Public Lands	September 2006	January 2007	To be filed
	Water Appropriation Permit	December 2006	February 2007	To be filed
	State Protected Species Consultation	December 2004	January 2007	Ongoing
Pollution Control Agency	Section 401 Water Quality Certification	May 2006	January 2007	To be filed
	NPDES Construction Stormwater General Permit	November 2006	January 2007	To be filed
	NPDES Construction Dewatering Discharge Permit	November 2006	January 2007	To be filed
	NPDES Hydrostatic Test Water Discharge Individual Permit	November 2006	January 2007	To be filed
Historical Society	Section 106 Historic Preservation Act Consultation	January 2006	January 2007	Ongoing
Department of Agriculture	Agricultural Impact Mitigation Plan Approval	January 2006	October 2006	To be filed
Department of Transportation	Road Crossing Permits	4 <sup>th</sup> Qtr 2006	1 <sup>st</sup> Qtr 2007	To be filed
<b>Local/Regional <sup>a/</sup></b>				
Counties of Clearwater, Hubbard, Wadena, Todd, Morrison, Stearns, Meeker, Wright, McLeod, Carver, Sibley, Scott, and Dakota	Road Crossing Permits	4 <sup>th</sup> Qtr 2006	1 <sup>st</sup> Qtr 2007	To be filed
	Conditional Use/Zoning Permits (as required)	4 <sup>th</sup> Qtr 2006	1 <sup>st</sup> Qtr 2007	To be filed
County Soil and Water Conservation Districts or other responsible Local Government Units	Wetland Conservation Act Exemptions	May 2006	July 2006	To be filed

Name of Agency	Permit/Activity	Application Submittal Date	Anticipated Agency Approval Date	Status
Red Lake Watershed District, Wild Rice Watershed District, South Two Rivers Watershed District, North Fork Crow River Watershed District, Sauk River Watershed District, Buffalo Creek Watershed District, Vermillion River Watershed Joint Powers Organization (JPO)	Watershed District/JPO Permits/Approvals (as required)	4 <sup>th</sup> Qtr 2006	1 <sup>st</sup> Qtr 2007	To be filed
Municipalities (Staples, Eden Valley, Coates, Rosemount)	Municipal Permits/Approvals (as required)	4 <sup>th</sup> Qtr 2006	1 <sup>st</sup> Qtr 2007	To be filed
Various Townships	Township Permits/Approvals (as required)	4 <sup>th</sup> Qtr 2006	1 <sup>st</sup> Qtr 2007	To be filed
Mississippi Headwaters Board	Land planning consultation	January 2006	January 2007	To be filed
<p><sup>a/</sup> The local/regional permits and approvals needed for the project have not been determined at this time. The appropriate local/regional agencies will be contacted to determine the permits/approvals and applicable regulatory requirements.</p>				

**Consideration of Alternative Routes  
(MR 4415.170)**

**4415.0170 EVIDENCE OF CONSIDERATION OF ALTERNATIVE ROUTES**

**If the applicant is applying for a pipeline routing permit under parts 4415.0045 to 4415.0100, the applicant shall provide a summary discussion of the environmental impact of pipeline construction along the alternative routes consistent with the requirements of parts 4415.0140 to 4415.0145 and the rationale for rejection of the route alternatives.**

MPL evaluated numerous system and route alternatives in defining its preferred route. MPL compared several factors for each alternative, such as ability to meet project objectives, technical and economic feasibility, and potential environmental impacts. A detailed discussion of the system and route alternatives is provided in Section 2.0 of the Environmental Assessment Supplement to this application.

MPL identified and rejected three system alternatives because of inability to meet project goals, construction constraints, higher incremental cost, and/or environmental risks. MPL identified and rejected several greenfield route alternatives (see Figure 15) through an analysis of routing constraints and opportunities. For each route alternative, MPL quantified and compared potential environmental impacts. As a result of this process, two major routing options were defined: an existing route option that would parallel MPL's existing pipelines, and a greenfield option that would follow a new corridor west and south of the Twin Cities metropolitan areas (see Figure 16). MPL compared environmental impacts and construction constraints for each option, and identified the greenfield option as its preferred alternative. The existing route option was rejected because of incremental environmental impacts as well as construction constraints, resulting primarily from residential and commercial encroachment along the existing pipeline corridor. MPL subsequently refined the greenfield route to minimize to the extent practical impacts on the environment and landowners.