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## **Appendix A**

Material Safety Data Sheet (MSDS)

A-1 – AppTitle2List

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## Material Safety Data Sheet

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name: Processed Natural Gas  
Product Code: None  
Synonyms: Dry Gas  
Generic Name: Natural Gas  
Chemical Family: Paraffin hydrocarbon  
Responsible Party: Unocal Corporation  
Union Oil Company of California  
14141 Southwest Freeway  
Sugar Land, Texas 77478  
For further information contact MSDS Coordinator  
8am – 4pm Central Time, Mon – Fri: 337-295-6198

#### **EMERGENCY OVERVIEW**

##### ***24 Hour Emergency Telephone Numbers:***

For Chemical Emergencies: For Health Emergencies:  
Spill, Leak, Fire or Accident California Poison  
Call CHEMTREC Control System  
North America: (800) 424-9300 Cont. US: (800) 356-3129  
Others: (703) 527-3887 (collect) Outside US:(415) 821-5338

***Health Hazards:*** Use with adequate ventilation

***Physical Hazards:*** Flammable gas. Can cause flash fire. Gas displaces oxygen available for breathing. Keep away from heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, mechanical/electrical equipment). Do not enter storage areas or confined space unless adequately ventilated.

***Physical Form:*** Gas

***Appearance:*** Colorless

***Odor:*** Odorless in the absence of H<sub>2</sub>S or mercaptans

***NFPA HAZARD CLASS:*** Health: 1 (slight)

***Flammability:*** 4 (extreme)

***Reactivity:*** 0 (least)

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

#### **HAZARDOUS COMPONENTS % WEIGHT EXPOSURE GUIDELINES**

Limits Agency Type  
Methane 98 1000 ppm MSHA TWA  
CAS# 74-82-8  
Carbon Dioxide 0-5 5000 ppm ACGIH TWA  
CAS# 124-38-9 30000 ppm ACGIH STEL  
5000 ppm OSHA TWA  
5000 ppm MSHA TWA  
5000 ppm Cal. OSHA TWA  
30000 ppm Cal. OSHA STEL  
Nitrogen 0-5 1000 ppm MSHA TWA  
CAS# 7727-37-9

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Ethane 1 1000 ppm MSHA TWA  
CAS# 74-84-0

*Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.*

### 3. HAZARDS IDENTIFICATION

#### **POTENTIAL HEALTH EFFECTS:**

**Eye:** Not expected to be an eye irritant.

**Skin:** Skin contact is unlikely. Skin absorption is unlikely.

**Inhalation (Breathing):** Asphyxiant. High concentrations in confined spaces may limit oxygen available for breathing.

**Ingestion (Swallowing):** This material is a gas under normal atmospheric conditions and ingestion is unlikely.

**Signs and Symptoms:** Light hydrocarbon gases are simple asphyxiants that, at high enough concentrations, can reduce the amount of oxygen available for breathing. Symptoms of overexposure can include shortness of breath, drowsiness, headaches, decreased coordination, visual disturbances and vomiting, and are reversible if exposure is stopped. Continued exposure can lead to hypoxia (inadequate oxygen), cyanosis (bluish discoloration of the skin), numbness of the extremities, unconsciousness and death. High concentrations of carbon dioxide can increase heart rate and blood pressure.

**Cancer:** No data available.

**Target Organs:** No data available.

**Developmental:** Limited data – see other comments, below.

**Other Comments:** High concentrations may reduce the amount of oxygen available for breathing, especially in confined spaces. Hypoxia (inadequate oxygen) during pregnancy may have adverse effects on the developing fetus. Exposure during pregnancy to high concentrations of carbon monoxide or carbon dioxide, which are produced during the combustion of hydrocarbon gases, can also cause harm to the developing fetus.

**Pre-Existing Medical Conditions:** None known.

### 4. FIRST AID MEASURES

**Eye:** If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

**Skin:** First aid is not normally required. However, it is good practice to wash any chemical from the skin.

**Inhalation (Breathing):** If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, immediately begin artificial respiration. If breathing difficulties develop, qualified personnel should administer oxygen. Seek immediate medical attention.

**Ingestion (Swallowing):** This material is a gas under normal atmospheric conditions and ingestion is unlikely.

### 5. FIRE FIGHTING MEASURES

#### **Flammable Properties:**

Flash Point, not applicable (gas)

OSHA Flammability Class: Flammable gas

LEL / UEL: No data

Auto-ignition Temperature: 800-1000°F

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**Unusual Fire & Explosion Hazards:** This material is flammable and can be ignited by heat, sparks, flames or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment). Vapors may travel considerable distances to a source of ignition where they can ignite, flashback, or explode. May create vapor/air explosion hazard indoors, outdoors or in sewers. If container is not properly cooled, it can rupture in the heat of a fire. Closed containers exposed to extreme heat can rupture due to pressure buildup.

**Extinguishing Media:** Dry chemical or carbon dioxide is recommended. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces.

**Fire Fighting Instructions:** For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self-contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8). Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. If this cannot be done, allow fire to burn. Move undamaged containers from immediate hazard area if it can be done with minimal risk. Stay away from ends of container. Water spray may be useful in minimizing or dispersing vapors. Cool equipment exposed to fire with water, if it can be done with minimal risk.

## 6. ACCIDENTIAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended. Stay upwind and away from spill/release. Notify persons down wind of spill/release; isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8). Notify fire authorities and appropriate federal, state and local agencies. Water spray may be useful in minimizing or dispersing vapors (see Section 5).

## 7. HANDLING AND STORAGE

**Handling:** The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Do not enter confined spaces such as tanks or pits without following proper entry procedures such as ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Section 2 and 8). Use good personal hygiene practice.

**Storage:** Keep container (s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces and all sources of ignition. Post area "No Smoking or Open Flame". Store only in approved containers. Keep away from any incompatible material (see Section 10). Protect container (s) against physical damage. Outdoor or detached storage is preferred.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Engineering controls:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits (see Section 2), additionally ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

**Personal Protective Equipment (PPE):**

**Respiratory:** Wear a positive pressure air supplied respirator in oxygen deficient environments (oxygen content <19.5%). A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

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**Skin:** Not required based on the hazards of the material. However, it is considered good practice to wear gloves when handling chemicals.

**Eye/Face:** While contact with this material is not expected to cause irritation, the use of approved eye protection to safeguard against potential eye contact is considered good practice.

**Other Protective Equipment:** A source of clean water should be available in the work area for flushing eyes and skin. Impervious clothing should be worn as needed. Self-contained respirators should be available for non-routine and emergency situations.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1 atm).

Flash Point: Not applicable (gas)

Flammable/Explosive Limits (%): No data

Auto-ignition Temperature: 800-1000°F

Appearance: Colorless

Physical State: Gas

Odor: Odorless in the absence of H<sub>2</sub>S or mercaptans

Vapor Pressure (mm Hg): No data

Vapor Density (air=1): <1

Boiling Point: -259°F

Freezing/Melting Point: No data

Solubility in Water: Slight

Specific Gravity: 0.30+ (Air=1)

Percent Volatile: 100 vol%

Evaporation Rate: (nBuAc=1): N/A (gas)

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable under normal conditions of storage and handling.

**Conditions to Avoid:** Avoid all possible sources of ignition (see Section 5 & 7)

**Incompatible Materials:** Avoid contact with strong oxidizing agents.

**Hazardous Decomposition Products:** Combustion can yield carbon dioxide and carbon monoxide.

**Hazardous Polymerization:** Will not occur.

## 11. TOXICOLOGICAL INFORMATION

No definitive information available on carcinogenicity, mutagenicity, target organs or developmental toxicity.

## 12. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, will be a RCRA "characteristic" hazardous waste due to the characteristic (s) of ignitability (D001). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material is subject to the land disposal restriction in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent than the federal requirements. Container contents should be completely used and containers should be emptied prior to discard. Container rinsate could be considered a RCRA hazardous waste and must be disposed of with care and in full compliance with federal, state and local regulations. Larger empty containers, such as

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drums, should be returned to the distributor or to a drum re-conditioner. To assure proper disposal of smaller empty containers, consult with state and local regulations and disposal authorities.

### 13. TRANSPORT INFORMATION

DOT Proper Shipping Name / Technical Name: Hydrocarbon Gas, Liquefied  
N.O.S. (Methane)  
Hazard Class or Division: 2.1  
ID#: UN1965

### 14. REGULATORY INFORMATION

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372: --None--

This material has not been identified as a carcinogen by NTP, IARC, or OSHA.

*EPA (CERCLA) Reportable Quantity:* --None—

### 15. DOCUMENTARY INFORMATION

Issue Date: 11/29/99  
Previous Issue Date: 3/29/99  
Product Code: None  
Previous Product Code: None

### 16. DISCLAIMER OF EXPRESSED AND IMPLIED WARRANTIES

The information in this document is believed to be correct as of the date issued. **HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THIS INFORMATION, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THIS PRODUCT, OR THE HAZARDS RELATED TO ITS USE.**

*This information and product are furnished on the condition that the person receiving them shall make his own determination as to the suitability of the product for his particular purpose and on the condition that he assume the risk of his use thereof.*

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## **Appendix B**

Agricultural Impact Mitigation Plan for Nashwauk Public Utilities Commission

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## Purpose and Applicability

This Agricultural Impact Mitigation Plan is intended to implement the permit condition of the pipeline routing permit issued by the Minnesota Public Utility Commission to the Nashwauk Public Utilities Commission (PUC Docket No. **PL, E280/GP-06-1481**)

In addition to the requirements of Minn. Rules Part 4415.0195, which are hereby incorporated by reference, this Plan contains measures intended to avoid, mitigate, or provide compensation for negative agricultural impacts that may result from pipeline construction.

The below prescribed construction standards and policies only apply to construction activities occurring partially or wholly on privately owned agricultural land. They do not apply to construction activities occurring entirely on public right-of-way, railroad right-of-way, publicly owned land, or private land that is not agricultural land.

Unless an easement specifically provides to the contrary, the mitigative actions specified in the construction standards and policies set forth in this Plan will be implemented in accordance with the conditions listed below:

### General Provisions

- A. All mitigative actions are subject to change by landowners and landowner's designees, provided such changes are negotiated in advance of construction and acceptable to Nashwauk.
- B. Unless otherwise specified, Nashwauk will retain qualified contractors to execute mitigative actions; however, Nashwauk may negotiate with landowners or landowners' designees to carry out the mitigative actions that landowners wish to perform themselves.
- C. All mitigative actions employed by Nashwauk pursuant to this Plan, unless otherwise specified in this Plan or in an easement negotiated with an individual landowner or landowners' designee will be implemented within 45 days following completion of the pipeline facilities on any affected property. If because of weather and landowner permission, Nashwauk needs a longer period of time, then Nashwauk shall have the burden to establish how much additional time will be reasonably necessary to complete the mitigative actions required by this Plan. Temporary repairs will be made by Nashwauk during construction as needed to minimize the risk of additional property damage or interference with the landowner's access to or use of the property that may result from an extended time period to implement mitigative actions.
- D. Except as otherwise provided in this plan, or unless otherwise agreed to by landowners or landowners' designees, all mitigative actions pursuant to this Plan will extend to associated future construction, maintenance and repairs by Nashwauk for the life of the pipeline routing permit issued by the Minnesota Public Utilities Commission.
- E. Nashwauk will implement the mitigative actions contained in this Plan to the extent that they do not conflict with the requirements of any applicable federal and state rules and regulations and other permits and approvals that are obtained by Nashwauk for the project.
- F. Each mitigative action contained in this Plan will be implemented to the extent that such mitigative action is not determined to be unenforceable by reason of other requirements of federal and state permits issued for the project. To the extent a mitigative action required by this agreement is determined to be unenforceable in the future due to requirements of other federal or state permits issued for the project, Nashwauk will so inform the MPUC and work with them to develop a reasonable alternative mitigative action.

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- G. By no later than 10 days prior to the construction of the pipeline, Nashwauk shall provide each landowner and tenant with a telephone number and address which can be used to contact Nashwauk, both during and following the completion of construction, regarding the agricultural impact mitigation work which is performed on their property or any other construction-related matter. Nashwauk shall respond within two business days to Landowner and Tenant telephone calls and correspondence.
  - H. Certain provisions of this Plan require Nashwauk to consult and/or agree with the landowner and tenant(s) of a property. Nashwauk shall engage in a good faith effort to secure the agreement of both landowner and tenant in such cases. In the event of a disagreement between landowner and tenant, Nashwauk's obligation shall be satisfied by securing the landowner's written agreement, unless the tenant has demonstrated in a court of competent jurisdiction that he or she has the superior legal rights in the matter at issue.
  - I. In accordance with the pipeline routing permit, this plan becomes a condition of the pipeline routing permit, and therefore, it is the responsibility of the Itasca County Inspector to conduct inspections to determine whether the pipeline construction is in compliance with this Plan pursuant to Minn. Stat. § 116I.06, Subd. 7. The Itasca County Inspector shall also maintain a written log recording comments and complaints concerning the pipeline construction made by owners and tenants of land crossed by the pipeline and by local officials and shall note, in particular, any complaints concerning failure to settle damage claims filed by an owner or tenants or failure to comply with the terms of an easement agreement, as required by Minn. Stat. § 116I.06, Subd. 7.
  - J. If any provision of this Plan is held to be unenforceable, no other provision shall be affected by that holding, and the remainder of the Plan shall be interpreted as if it did not contain the unenforceable provision.

### Definitions

- Agricultural Land = Land which is presently under cultivation; land which has been previously cultivated and not subsequently developed for non-agricultural use; and cleared land which is capable of being cultivated. It includes land used for cropland, hay land, pastureland, managed woodlands, truck gardens, farmsteads, commercial agriculturally related facilities, feedlots, livestock confinement systems, land on which farm buildings are located, and land in government set-aside programs.
- County Inspector = The inspector designated by the Itasca County Board) pursuant to Minn. Stat. § 116I.06, Subd. 7.
- Cropland = Land used for growing row crops, small grains, or hay; includes land which was formerly used as cropland but is currently in a government set-aside program, and pastureland formerly used as cropland.
- NPUC = Nashwauk Public Utilities Commission and/or its assignees
- Pipeline = The proposed pipeline in Itasca County as described in the pipeline routing permit issued by the Minnesota Public Utilities Commission to Nashwauk (PUC Docket No. PL, E280/GP-06-1481
- Landowner = Person(s) holding legal title to property on the pipeline route from whom NPUC is seeking, or has obtained, a temporary or permanent easement.

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Landowner's Designee	=	Any person(s) authorized in writing by a Landowner to make decisions regarding the mitigation or restoration of agricultural impacts to such Landowner's property
Non-Agricultural Land	=	Any land that is not "Agricultural Land" as defined above.
Right-of-Way	=	Includes the permanent and temporary easements which Nashwauk acquires for the purpose of constructing and operating the pipeline.
Tenant	=	Any person lawfully residing on or in possession of the land which makes up the "Right-of-Way" as defined in this Plan.
Topsoil	=	The mollic epipedon, which is defined as the upper part of the soil having a hue, value, and chroma of 10YR 3/3 or darker according to a Munsell Soil Color Chart, or the upper eight (8) inches of soil, whichever is greater.

### **Mitigative Actions**

#### **Pipeline Depth of Cover**

- A. Except for above-ground piping facilities, such as mainline block valves, tap valves, meter stations, etc., and except as otherwise stated in this Plan, the pipeline will be buried with the following depths of cover:
1. Where the selected actual right-of-way is located along existing rights-of-way such as county roads, along section lines and half section lines, or along headlands in accordance with the pipeline routing permit, the pipeline may be constructed with the minimum depth of cover 4-1/2 feet (54 inches) required by Minn. Stat. §116I.06, Subd. 1.
  2. Where the selected actual right-of-way is not located as described in number A.1. above, the minimum depth of cover will be 4-1/2 feet.
  3. Where the pipeline crosses nonagricultural land, the depth of cover may be the minimum depth required by federal or state regulations.
- B. Notwithstanding paragraph A of Section 1, unless the landowner determines otherwise in writing, Nashwauk shall construct its pipeline under all existing non-abandoned tile and planned drainage tile within five (5) feet of the surface. Nashwauk may install its pipeline over drainage tile buried deeper than five (5) feet. Furthermore, where soil conditions exist indicative of the presence of a drainage tile or Nashwauk has been informed by the landowner of the presence of drain tile in a location, Nashwauk is required to excavate or probe for the presence of tile to a depth of eight (8) feet. Planned drainage tile means locations where the proposed installation of underground tile is made known in writing to Nashwauk prior to the securing of an easement on the property, and the landowner has plans for, or has other evidence of, the proposed installation of underground tile drawn by an individual experienced in or trained in the installation or planning of drainage systems. In determining the proper depth of the pipeline, Nashwauk shall accommodate the depth and grade needed for both existing and planned drainage tile to function properly. Nashwauk shall not change the grade of existing tile to accommodate the pipeline without the landowner's advance written consent.
- C. A minimum of 12 inches of separation will be maintained between the pipeline and drainage tile unless the landowner or landowner's designee agrees in writing to a lesser separation distance or other physical

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conditions exist which prevent the minimum distance of separation to be achieved and the landowner is informed of the physical condition prior to the installation of the pipeline over the tile. If the landowner or landowner's designee is unavailable, the county inspector will be so informed.

- D. Notwithstanding the foregoing, in those areas where (i) rock in its natural formation and/or (ii) a continuous strata of gravel exceeding 200 feet in length are encountered on non-agricultural land, the minimum top cover will be 30 inches.
- E. On lands subject to erosion, Nashwauk will patrol the pipeline right-of-way with reasonable frequency to detect erosion of the top cover. In no instance will Nashwauk knowingly allow the amount of top cover to erode more than 12 inches from its original level or to be less than 36 inches, whichever measure provides for the greatest depth of cover, except as stated in D above. Nashwauk will be responsible for maintaining the proper top cover under this section where erosion has occurred due to normal farming practices. However, Nashwauk will not be responsible for a landowner or tenant removing cover or causing erosion to occur over the pipeline through means other than normal farming practices.

### **Topsoil Stripping, Storage, and Replacement**

- F. The depth of soil to be removed (stripped) and separately stored for later replacement must be determined by a properly qualified soil scientist or soil technician. The soil scientist or soil technician must set stakes or flags in a manner to identify the depth of soil to be removed. The topsoil must first be stripped from the area to be excavated above the pipeline and the adjacent subsoil storage area, and such topsoil must be stored separately from the subsoil.
- G. All subsoil material that is removed from the trench will be placed in a second stockpile that is separate from the topsoil stockpile.
- H. In backfilling the trench, all stockpiled subsoil material must be placed back into the trench before replacing the topsoil, or must be hauled off the landowner's premises or disposed of on the landowner's premises at a location that is mutually acceptable to the landowner, the tenant and Nashwauk, and at Nashwauk's cost and expense.
- I. The topsoil must be replaced on the subsoil storage area and over the trench so that after settling occurs, the topsoil's original depth and contour (with an allowance for settling) will be achieved. In no instance will the topsoil materials be used for any other purpose.

Where excavations are made for road, stream, drainage ditch, or other crossings, the actual depth of topsoil will be replaced as nearly as reasonably possible.

### **Rock Removal**

The following conditions with respect to rock removal shall apply on agricultural land:

- A. The actual depth of top cover within the pipeline trench, bore pits, or other excavations will not be backfilled with soil containing rocks of any greater concentration or size than existed prior to the pipeline's construction.
- B. If trenching, blasting, or boring operations are required through rocky terrain, suitable precautions will be taken to minimize the potential for oversize rocks to become interspersed with the soil material that is placed back in the trench.

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- C. Soil removed from the pipeline trench, bore pits, or other excavations containing unacceptable rock concentrations or sizes (see A. above) will be hauled off the landowner's premises or disposed of on the landowner's premises at a location that is mutually acceptable to the landowner, the tenant and Nashwauk, and at Nashwauk's cost and expense. Nashwauk may elect to remove excess rock from the soil and use the soil as backfill material.
- D. After completion of the compaction alleviation activities required below, Nashwauk shall remove rocks, which are six (6) inches in diameter, or greater from surface of disturbed soil on the entire construction area. The amount of rock on the right-of-way after construction will be similar to that on adjacent off-right-of-way areas. Rocks so removed will be hauled off the landowner's premises or disposed of on the landowner's premises at a location that is mutually acceptable to the landowner, the tenant and Nashwauk, and at Nashwauk's cost and expense.

### **Removal of Construction Debris**

All construction-related debris and material, which is not an integral part of the pipeline, will be removed from the landowner's property at Nashwauk's cost. (Note: Such material to be removed will include litter generated by the construction crews.)

### **Compaction, Rutting, Fertilization, Liming, and Soil Restoration**

- A. Compaction will be alleviated on all agricultural land traversed by construction equipment. Cropland and all pasture and woodland that have been compacted will be plowed with cultivation equipment as recommended by the appropriate county Soil and Water Conservation District. In areas where topsoil has been segregated, Nashwauk will first plow the subsoil with cultivation equipment to the extent recommended by the appropriate county Soil and Water Conservation District before replacing the segregated topsoil. However, alleviation of compaction of the topsoil must be performed during suitable weather conditions, and must not be performed when weather conditions have caused the soil to become so wet that activity to alleviate compaction will damage the future production capacity of the land as determined by the landowner or landowner's designee.
- B. In the case of a claims for damages related to soil compaction, upon request, Nashwauk itself shall pay for, or at the landowner's or tenant's option, reimburse the landowner or tenant for the cost of having a member of the Minnesota Association of Professional Soil Scientists, who is also licensed by the State of Minnesota, or an appropriately qualified Minnesota licensed professional engineer perform a soil survey for bulk density and field moisture on the right-of-way and on adjacent land in the same field containing the same soil map units. As long as the adjacent lands contain the same soil map units, the selected adjacent land is assumed to be suitable for purposes of establishing the preconstruction conditions that existed in the right-of-way. Said soil survey shall be performed pursuant to the protocol identified in the USDA's *Soil Survey Methods Manual* (Soil Survey Investigations Report No. 42, Version 3.0, January 1996, which may be found at <http://soils.usda.gov/procedures/lmm/ssir42.pdf>).
- C. In particular, see Bulk Density Cores (Method 4A3), and Field Moisture (Method 4A3a)), or other method as approved by the Landowner, such as a soil penetrometer. In addition, where there are row crops, all samples shall be taken in the middle of the row, but not in rows where the drive wheels of farm equipment normally travel. Copies of the results of the above-described survey shall be provided to landowners, landowner's designees and tenants at Nashwauk's expense within 45 days of Nashwauk's receipt of a request to perform such a survey.
- D. Nashwauk will restore all construction-rutted land to as near as practical to its pre-construction condition.

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- E. Compensation of landowners and/or tenants, as appropriate, for damages caused by Nashwauk during pipeline construction, including the cost of soil restoration will be determined as provided in the "Schedule of Damage Compensation" provided below.
  - F. If there is any dispute between the landowner and Nashwauk as to what areas need to be ripped or chiseled, the depth at which compacted areas should be ripped or chiseled, or the necessity or rates of lime, fertilizer, and organic material application, the appropriate county Soil and Water Conservation District's opinion shall be considered by Nashwauk and the landowner.

### **Land Leveling**

Following the completion of the pipeline construction, Nashwauk will restore any right-of-way to its original pre-construction elevation and contour. If in the future, uneven settling occurs or surface drainage problems develop, as a result of pipeline construction, Nashwauk will provide additional land leveling services, or compensation, within 45 days of receiving a landowner's or tenant's verbal or written notice, weather, landowner and tenant permitting.

### **Prevention of Soil Erosion**

- A. Nashwauk will work with landowners and tenants to prevent excessive erosion on lands disturbed by construction. Reasonable methods will be implemented to control erosion at Nashwauk's cost and expense.
- B. Prior to construction of the pipeline, erosion must be controlled by the planting of a crop by the landowner or tenant. However, Nashwauk must chop any remaining crop prior to construction as directed by the landowner or tenant.
- C. During construction, Nashwauk will use suitable means of controlling erosion as recommended by the appropriate county Soil and Water Conservation District.

### **Repair of Damaged Soil Conservation Practices**

All soil conservation practices (such as terraces, grassed waterways, ridge till, etc.) which are damaged by the pipeline's construction will be restored to their pre-construction condition.

### **Clearing of Trees and Brush from the Easement**

- A. If trees are to be removed from the right-of-way, Nashwauk will consult with the landowner or landowner's designee to see if there are trees of commercial or other value to the landowner.
- B. If there are trees of commercial or other value to the landowner's or landowner designee, Nashwauk will allow the landowner's or landowner designee the right to retain ownership of the trees with the disposition of the trees to be negotiated prior to the commencement of land clearing and included in the easement Plan. Relocation of such trees will be at Nashwauk's cost.
- C. Unless otherwise restricted by federal, state or local regulations, Nashwauk C will follow the landowner's or landowner designee's desires as stated in the easement agreement regarding the removal of tree stumps that Nashwauk might otherwise leave in the ground. Any such stumps will be removed at Nashwauk's cost.
- D. Unless otherwise restricted by federal, state or local regulations, Nashwauk will follow the landowner's, landowner designee's, and the tenant's desires as stated in the easement agreement regarding the disposal

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of trees, brush, and stumps of no value to the landowner by burning, burial, etc., or complete removal from any affected property, all at Nashwauk's cost.

### **Mitigation for Other Natural Resource Impacts**

Unless otherwise required by a state or federal agency or other governmental body, Nashwauk will not mitigate for impacts to other natural resources (wetlands, woodlands, etc.) utilizing agricultural land as mitigation lands. If agricultural land is used for woodland/wetland impact mitigation, Nashwauk will attempt to negotiate a mitigation ratio not to exceed a 1:1 ratio.

### **Ingress and Egress**

Prior to the pipeline's installation, Nashwauk, the landowner, and the tenant will reach a mutually acceptable agreement on the means of entering and leaving the pipeline right-of-way should access to the right-of-way not be practical or feasible from adjacent segments of the pipeline right-of-way or from public highway or railroad right-of-way.

### **Temporary Roads**

- A. The location of temporary roads to be used for construction purposes will be negotiated with the landowner and the tenant.
- B. The temporary roads will be designed not to impede proper drainage and will be built to minimize soil erosion on or near the temporary roads.
- C. Upon abandonment, temporary roads may be left intact through mutual agreement of the landowner, the tenant and Nashwauk unless otherwise restricted by federal, state or local regulations.
- D. If the temporary roads are to be removed, the right-of-way upon which the temporary roads are constructed will be returned to its previous use and restored to equivalent condition as existed prior to their construction, including fertilization, liming, and soil restoration as described in item 0 above.

### **Weed Control**

- A. On any right-of-way over which Nashwauk has jurisdiction as to the surface use of such land (i.e., valve sites, metering stations, etc.), Nashwauk will provide for weed control in a manner that does not allow for the spread of weeds onto adjacent lands used for agricultural purposes. Any weed control spraying performed will be done so by a State of Minnesota licensed applicator. Otherwise, compensation of landowners and/or tenants, as appropriate, will be determined by mutual agreement or as provided by an independent third party mediator acceptable to both parties and paid for by Nashwauk.

### **Pumping of Water from Open Trenches**

- A. In the event it becomes necessary to pump water from open trenches, Nashwauk will pump the water in a manner that will avoid damaging adjacent agricultural land, crops, and/or pasture. Such damages include, but are not limited to inundation of crops for more than 24 hours, deposition of sediment in ditches and other watercourses, and the deposition of gravel in fields, pastures, and any watercourses.
- B. If it is impossible to avoid water-related damages as described in A. above, compensation of landowners and/or tenants will be determined as provided. Nashwauk will either restore the land, pasture, watercourses, etc. to their preconstruction condition or provide compensation to landowners and/or tenants, as appropriate.
- C. All pumping of water shall comply with federal, state, and local regulations.

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### **Construction in Wet Conditions**

- A. The landowner or the landowner's designee, and/or the tenant may request that the Itasca County Inspector visit the construction site on landowner's property to make a determination as to whether weather conditions have caused the soil in the construction area on the landowner's property to become so wet that continued construction activity will damage the future production capacity of the land included in the construction area. Should the Itasca County Inspector determine that, due to wet conditions, continued construction activity will result in damage to the future production capacity of the land included in the construction area, then he or she may temporarily halt the construction activity on that landowner's property (not on the entire construction spread) until the Itasca County Inspector consults with supervisory personnel of Nashwauk or of the contractor operating for Nashwauk.
- B. If construction is continued over the Itasca County Inspector's objection, and damage results there from, the landowner may seek a determination of damages. For the purpose of this paragraph, it is presumed that any damage occurring after the Itasca County Inspector's objection is caused by any construction that takes place after the Itasca County Inspector's objection unless Nashwauk can prove otherwise. Compensation of landowners and/or tenants, as appropriate, will be determined by mutual agreement or as provided by an independent third party mediator acceptable to both parties and paid for by Nashwauk.

### **Procedures for Determining Construction-Related Damages and Providing Compensation**

- A. Nashwauk will develop and put into place an administrative procedure for the processing of landowners' claims for determining just compensation for construction-related damages. The procedure shall be intended to eliminate or minimize the necessity of court action by a landowner to recover damages, to provide a degree of certainty and predictability for both landowners and Nashwauk, and to foster good relationships between Nashwauk and landowners over the long term.
- B. Nashwauk shall comply with the administrative procedure set forth below in determining the amount of compensation to pay individual landowners.
  - 1. Prior to the construction of the pipeline, Nashwauk shall provide to each landowner, landowners designee and/or tenant the name, telephone number and mailing address of Nashwauk representative assigned to that geographic area and responsible for the liaison activities on behalf of Nashwauk. This Nashwauk representative will be the contact person both during and following the completion of construction. Prior to any construction related activities, Nashwauk shall also provide the landowner with a copy of the "Procedures for Determining Construction-Related Damage and Providing Compensation".
  - 2. No sooner than 48 hours after Nashwauk has provided the landowner with a copy of the "Procedures for Determining Construction-Related Damage and Providing Compensation" and prior to the start of construction on the property, Nashwauk, through its right-of-way agents, shall meet with the landowner, the landowner's designee and/or the tenant, and examine each property to inventory crops, livestock, fences, irrigation systems, tiles, etc.
  - 3. Within 45 days after the completion of construction of the entire pipeline, a Nashwauk representative shall personally meet with each landowner, landowner's designees and/or tenants to investigate and measure the losses caused by pipeline construction activities on the landowner's property.
  - 4. By no later than 30 days after the meeting identified in subparagraph (3), Nashwauk shall provide the landowner, the landowner's designee, and the tenant with a detailed itemized list of the damages Nashwauk proposes to pay the landowner, landowner's designee and the tenant.

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5. If the landowner or the landowner's designee or the tenant reaches agreement on the amount of compensation for the damages, the matter shall be finalized by the parties.
- C. No landowner, landowner's designee, or tenant is required to follow the administrative procedure set forth above nor accept the amount of damages offered by Nashwauk pursuant to this procedure. However, in the event a landowner or a landowner's designee or a tenant shall decide not to accept the compensation offered by Nashwauk, the compensation offered is only an offer to settle, and the offer shall not be introduced in any administrative or judicial proceeding brought by the landowner, the landowner's designee, or a tenant to establish the amount of damages Nashwauk must pay.
- D. Nashwauk shall respond within 48 hours to any landowner and/or tenant issues or concerns both during the construction and long-term operational activities.

#### **Advance Notice of Access to Private Property**

- A. Nashwauk will provide the landowner and tenant with a minimum of 24 hours prior notice before accessing his/her property for the purpose of constructing the pipeline.
- B. Prior notice shall first consist of a personal contact or a telephone contact, whereby the landowner and the tenant is informed of Nashwauk's intent to access the land. If the landowner and tenant cannot be reached in person or by telephone, Nashwauk will mail or hand-deliver to the landowner and the tenant's home a dated, written notice of Nashwauk's intent. The landowner and tenant need not acknowledge receipt of the written notice before NPUC can enter the landowner's property.

#### **Indemnification**

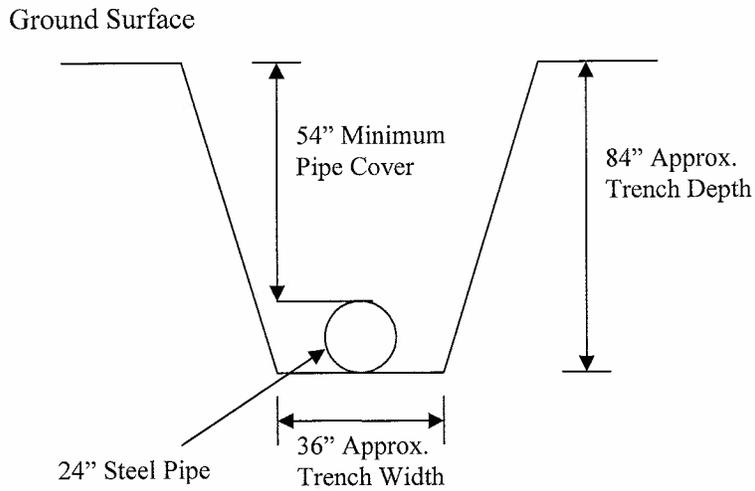
For any pipeline installation covered by this plan, Nashwauk or its successor in interest will indemnify all landowners and tenants, their heirs, successors, legal representatives, and assigns from and against all claims, injuries, suits, damages, (including, but not limited to, crop loss, real and personal property damages) costs, losses, and reasonable expenses resulting from or arising out of the laying, maintenance, removal, repair, use or existence of such pipeline, including damage to such pipeline or any of its appurtenances and the leaking of its contents, except where such claims, injuries, suits, damages, costs, losses, and expenses are caused by the negligence or intentional acts, or willful omissions of such landowners and tenants, their contractors, heirs, successors, legal representatives, and assigns. This section shall not preclude Nashwauk from securing releases from future damage claims from landowners and tenants as part of damage settlements, as long as the subject matter of the releases does not exceed the subject matter of the corresponding settlements. However, the above-referenced releases shall not be included as part of any easement agreements obtained by Nashwauk.

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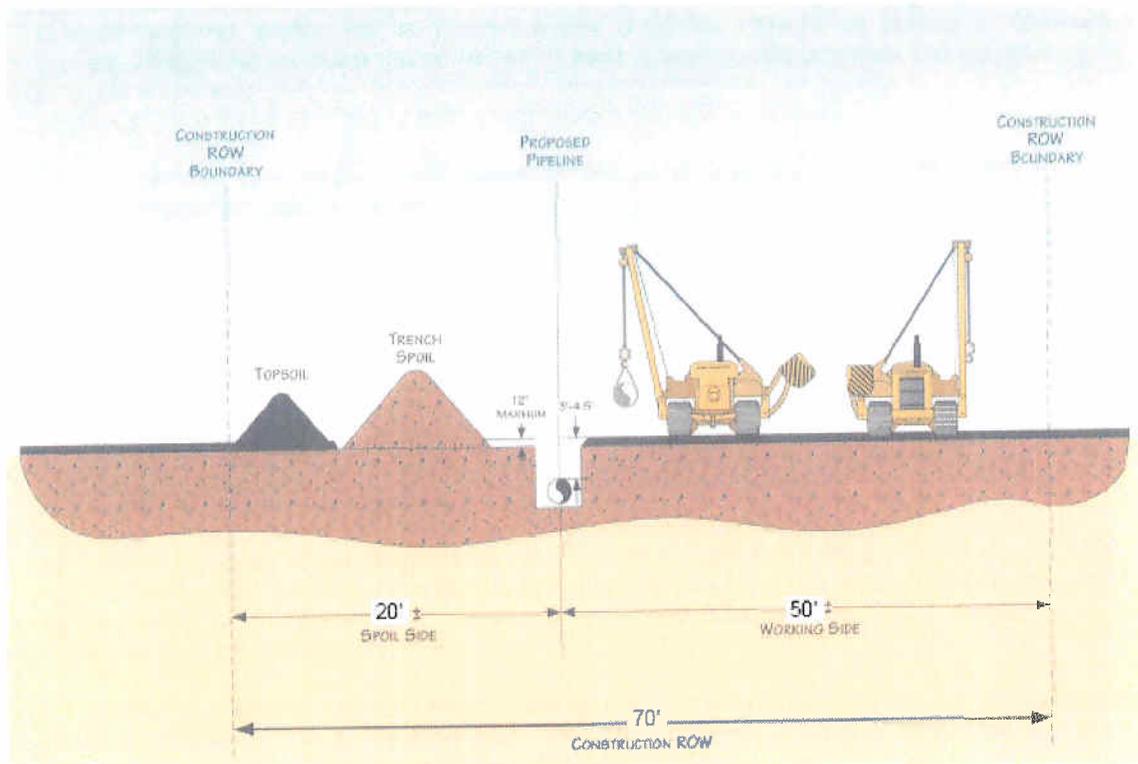
## **Appendix C**

Typical Drawings: Trench Detail ROW Schematic

**Figure C-1: Typical Section-Gas Pipeline Open Trench Installation**

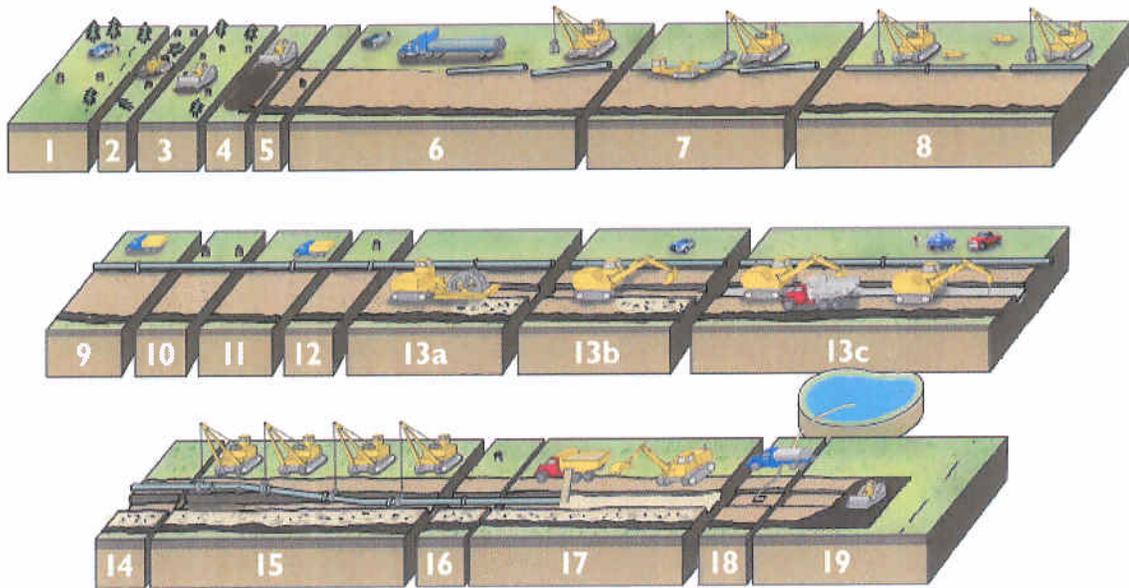


**Figure C-2: Typical R.O.W / Trench Construction Detail**

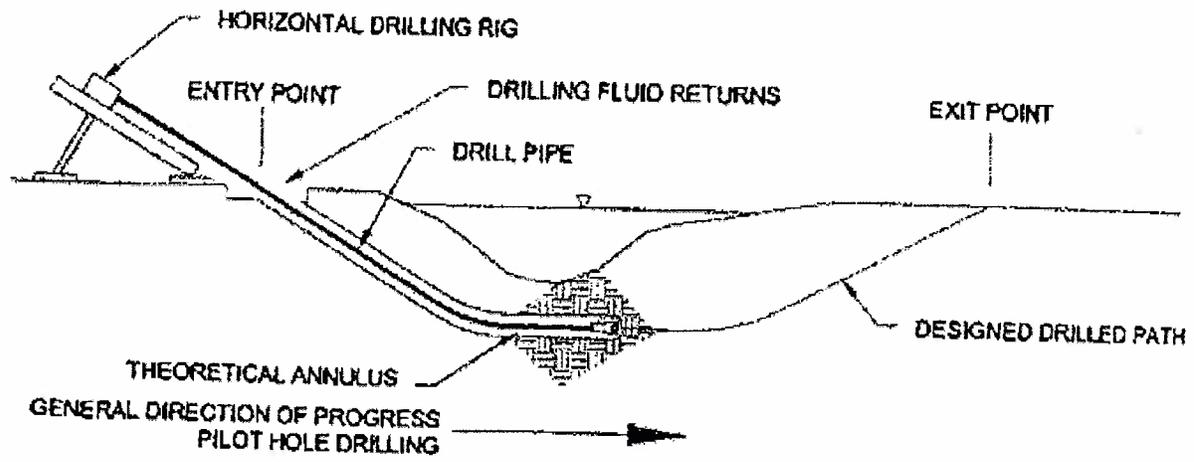


**Figure C-3: Conceptual Pipeline Construction Sequence**

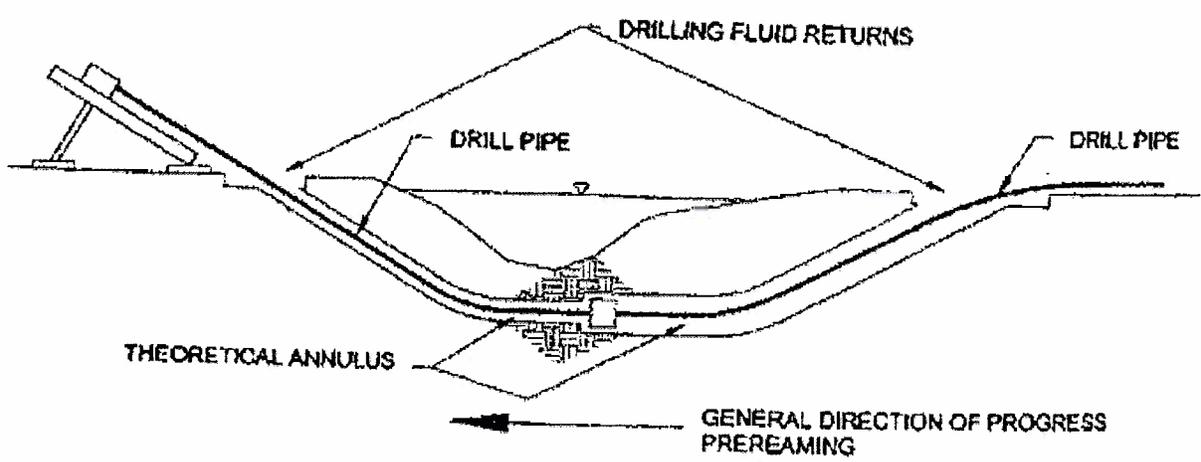
- |                                   |                                   |   |
|-----------------------------------|-----------------------------------|---|
| 1. Survey and Staking             | 8. Line-Up, Initial Weld          | 13c. Trenching (rock)                                 |
| 2. Clearing                       | 9. Fill & Cap, Final Weld         | 14. Inspection & Repair of Coating                    |
| 3. Front-End Grading              | 10. As-Built Footage              | 15. Lowering Pipe into Trench                         |
| 4. ROW Topsoil Stripping          | 11. X-Ray Inspection, Weld Repair | 16. As-Built Survey                                   |
| 5. Restaking Centerline of Trench | 12. Coating Field Welds           | 17. Pad, Backfill, Rough Grade                        |
| 6. Stringing Pipe                 | 13a. Trenching (wheel ditcher)    | 18. Hydrostatic Testing, Final Tie-in                 |
| 7. Field Bending Pipe             | 13b. Trenching (backhoe)          | 19. Replace Topsoil, Final Clean-Up, Full Restoration |



### PILOT HOLE



### PREREAMING



### PULLBACK

